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A MANUAL OF TEMPERA-PAINTING

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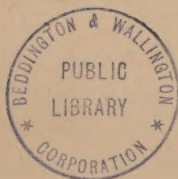


MME MARUYA VALÒ

A MANUAL OF TEMPERA-PAINTING

BY
MAXWELL ARMFIELD

WITH A FOREWORD BY
SIR CHARLES HOLMES



LONDON
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To

J. E. S. AND ALL PIONEERS

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FOREWORD

IN Painting, as in politics and social science, we appear to be hurrying swiftly to chaos, if not to catastrophe. The whole fabric of practice and tradition in the use of oil paint has been blown to atoms by the explosion of successive bombs hurled from the neighbourhood of the Rue la Boétie.

The crumbling fragments make atrocious building material, and the artists who stand aside from this house-breaking or heart-breaking industry are probably wise. They may not seem so clever, or attain the same immediate notoriety as the oil-painters whom the critics delight to honour, but they are working out their salvation in other fields with a consistent and logical success which promises well for the future. Instead of delving in the disintegrated rubble of modernism, these artists have turned back to the study and the revival of ancient crafts, old aesthetic quarries which have never been worked out and are still capable of supplying any quantity of sound material for new structures.

The work which is being done in this way by our craftsmen, our etchers, and our engravers is something for which we may well be proud and our children grateful. The revival of old processes is a world-wide movement, but nowhere else is it being carried on with so

high a level of accomplishment and orderly invention. The Black-and-White Room at the Royal Academy for the last two years has afforded evidence of our mastery of this part of the Graphic Arts: some of our potters and metal workers are no less gifted and accomplished. It is refreshing to have ocular proof of so much vitality, talent, and sound judgment at a moment when, in the world of politics and economics, these qualities seem to be failing us. In times which are as doubtful and difficult as any which the nation has had to face for a century or more, these craftsmen set us a fine example.

The revival of tempera-painting has been a more gradual process. The results obtained in the past with the egg-medium, and its offshoots, have been so various and so difficult to analyse from a distance of four or five centuries, that it has taken some thirty years of consistent study to rediscover the main principles upon which Italian tempera pictures were constructed. That study will always be associated with the name of Lady Herringham. Her translation of Cennino Cennini's treatise in 1899, coupled with the foundation, two years later, of the Society of Painters in Tempera, mark the beginning of the experiments which have now placed this fine ancient method of painting at the disposal of any artist who cares to practise it. Still it remains

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a method full of technical niceties, and so can only be explained and taught by one well versed in its use. From his experience both with the brush and with the pen Mr. Maxwell Armfield was just the man to summarize and to set out in handy shape the chief things which the tempera-painter must keep in mind—the varieties of the egg-medium itself, and the uses to which they are naturally adapted.

What is no less important, he insists that tempera, like every other craft, is not only a mode of work but a mode of thought and of vision. And there is much to be said for his personal opinion that the mode of work and thought and vision which tempera enforces is far more in harmony with the general tendencies of modern life, as evinced, for example, in architecture and the allied crafts, than is the contemporary fashion of painting in oil. His book is thus something more than a technical handbook for tempera-painters, actual or potential. It is a real contribution to the general artistic problem of our time—a survey made by a craftsman who has not only learned all that is known at present about the art he practises, but has clearly given much thought as to the lines on which it may be developed in the future. Without that sense of the future, of the wider horizon that new knowledge and new experiment may

reveal, all these "revivals" would be so much archaistic pedantry. With that sense, that vision of new and mighty things still to be done, they cease to be historical curiosities. The breath has entered into the dry bones and they are become alive.

C. J. H.

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INTRODUCTION

INTRODUCTION

THE word "tempera", taken from the phraseology of the Italian Renaissance, has lately been used to imply an egg-medium exclusively, and indeed it was so used to some extent by Cennini himself in his treatise on art-methods, but the word has no such actual meaning, and merely signifies a medium. We have the same word, of course, in English in varied forms: we can even say that our colours are "tempered" with various oils, etc., in order to render them adhesive and cohesive. The word has become identified so closely with the ancient egg medium, chiefly because that was the method most in practice at the time when technical matters began to be written of with any degree of freedom and accuracy. Fresco was almost the only alternative before the Italian of Angelico's age, and for that no medium but water was required.

So that it is perfectly accurate to speak of a gum-tempera or a size-tempera or an oil-tempera, but in this book the word will be used to denote the egg-method exclusively—at least as the basis—that is, those methods of painting where egg-yolk or the oil of egg is used to bind the powdered colour into a suitable paste for work. Owing to the pioneer revival work of Messrs. Spencer Stanhope,

Joseph Southall, J. D. Batten, Mrs. Herringham, A. J. Gaskin, and others, tempera has lately come to the fore as a modern possibility to such an extent that the colour-makers have introduced a species of paint, done up in tubes, which they call tempera. It is sometimes ground with some egg-mixture, and sometimes with other concoctions. These colours are excellent for poster work and all kinds of designing. They are, however, quite unlike true tempera in effect, and it is impossible to use them in the same way. The reason in the case of those actually ground in oil of egg, probably, is that the egg loses as much elasticity in being preserved in this way as it does when preserved in water-glass for the table. The yolk of preserved eggs is very much thinner than that of fresh ones, and almost always breaks into the white before it can be separated for use. At any rate the colours are quite different from those mixed by oneself with the yolk of fresh eggs.

Whilst the actual practice is straightforward, the use of the medium in its characteristic beauty requires, as a rule, considerable mental readjustment on the part of the painter. It demands a habit of mind, or point of view, that is somewhat rarely met with amongst artists even to-day. Very broadly it takes time. It requires, too, a certain continuity of thought and effort combined with a pre-

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cision and regularity of workmanship that is much out of fashion at the moment. A tempera picture cannot be thrown off in a wave of emotional excitement. It must be an orderly analysis and expression of a definite emotional idea. The artist should not be at the mercy of his emotions, but must have entire control over them as well as over his tools.

THE ATTRACTION OF TEMPERA

Tempera is attractive to almost everyone who sees it. The shock given to the public by the painters of the Birmingham school at the New Gallery ten years ago is forgotten, and Mr. Southall's success in Paris with his tempera exhibition (some of which is now in America) vindicated the method in what was then the art metropolis. The unique attraction of tempera is, of course, its jewel-like colour: its gay and debonair ingenuousness. And especially of late has its decorative value begun to be appreciated. "It goes with architecture" as nothing else does except *buon fresco*.

To-day, as painters, we most of us feel in a period of unsettlement. A new Renaissance is on us. We are *au point du jour*. We know that we need a new sense of colour: purer, cleaner, fresher colour. We want our pictures to be as gay as our best advertisements and journalism. We know that our schools of art have failed us, that we learn very little there that is of any

real value. We know that the pictures that the most advanced of us are painting at the moment are good to see, in that they evince a healthy reaction from accepted rules and canons; yet we know that they are not lasting pictures. For one thing, they are unpleasant. Oil has failed us; and the best of our efforts are gained by drawing it out of our colour with blotting-paper—a procedure not smiled upon by the chemists. Otherwise our daring primaries sink to a dull and horrible rawness in a few weeks, a rawness that sets everybody's teeth on edge, and with a similar sinking at heart we find ourselves obliged to brazen out the position by a feeble defence, taking the line of the irrelevance of beauty and its fluctuation. And all the time we know quite well that whilst it may not be the aim of art to be beautiful so much as to praise beauty, yet all the same, great art always has been beautiful in result and recognized to be so. At any rate some of us have felt all this, and have had a vague feeling that possibly in the mere egg-yolk might be our salvation.

For myself, I doubt it.

I have experimented with many media at divers times, hoping to find therein my artistic salvation, and have now come to the conclusion that there is only one means of salvation given among painters, namely, an intelligent understanding of what they want to do and

of how that can be achieved. This question of colour, for instance.

You may spend many years experimenting in order to improve your colour, in the search after colour that is bright and yet not raw nor garish, and all those years of labour may be saved if by intuition, or by tuition, you perceive the simple fact that the colour of the picture is entirely dependent on the character of the shapes, which is but the unfoldment of the rhythm, which is itself immediately controlled by the subject, which is coloured as to treatment by your own mental state and outlook.

The attraction of tempera is specific. It is not general. No medium can be used as a universal language, so that it is only when one has command of every medium that he is quite free to say the most he can.

The painter must first know what symbolism of technique or language is best able to convey his particular idea. Finally he must know how to achieve this technique. It is obvious that no single medium can fill this immense bill. Temperists have in the past done a deal of harm by claiming for their pet medium more than they have performed or can perform with it. It is necessary to state as nearly as possible just what tempera can and cannot do. Its demands are of steel-like rigidity. If you play about with it, you will lose all the

qualities that originally attracted you, but, at the same time, when the method has been systematically learned in the traditional way every one will find that he can use it to express just a little more than has anyone else, because every medium is elastic at the demand of intelligence. Tempera has many attractions, but they are inherent in its particular individuality. Its practice, for instance, is essentially formal, and formality is inseparable from its essential nature.

QUALITIES OF TEMPERA

The characteristic qualities that attract most painters, as we have just said, have to do with its colour. This peculiar glow in the pigment is due to several facts, chiefly the translucency of the colour and the character of the ground used. The yolk of egg seems to hold the particles of colour much as does amber varnish. It is, however, less rich in effect and less juicy, and besides has this difference—that whereas amber keeps the particles of pigment separate, and thus encourages mixtures which retain a clarity unsurpassed in any other method, the egg-yolk for some reason soon becomes muddy when mixed, and so discourages mixtures. Mixed tones in tempera are apt to be dirtier than in ordinary oil-colour, possibly because it lacks body. One of the results of this is that the actual colour of the pigment becomes of

supreme importance, and a large palette is necessary for varied work.

One collects colours as he collects jewels or rare papers. Another result of the undesirability of mixture is that hues are modified by superimposing one upon the other. This still exists as a practice in oil painting also, but the under-painting here is much less important than in tempera because the pigment is so much less translucent. The effect of under-painting in tempera is to produce an intensity of colour similar to that of stained glass and with a like quality; one colour glowing through the superimposed layer without mixing with it. The colours therefore can be used in a much higher key than in oil without becoming in the least garish. This method relegates the greys, and to some extent pale tints, to other media. It is quite possible to paint a beautiful grey in tempera, of course, but a picture telling as a grey whole is better worked out in oil or fresco, the beauty of tempera being in rich, warm hues, reminiscent of yellow suns and curious flaming after-glows.

In the case of oil paint the natural pigment is generally considered ugly by painters, and it is only by elaborate manipulation that the surface can be rendered pleasing in itself. On the other hand, in tempera, if the pigment be applied in the legitimate way, it is almost impossible to produce an ugly surface.

The portraits of Botticelli, for instance, with their severe and rigorous outline, would be unspeakably wiry and hard in oil, but in tempera such a method merely gives a sense of pleasant firmness and precision.

In his larger wall-paintings, such as the Venus picture in the Uffizi Gallery,¹ Botticelli uses the alternative method of the medium, namely, the admixture of a considerable quantity of white with all the colours. This method is more akin to modern oil painting—although it never should be so solid—and gives very much the effect of the flatter oil wall-pictures of Puvis de Chavannes. This method is no doubt much the best where the painting is in close proximity to a plastered or a stone wall, whilst the transparent method (which does not entirely exclude white) is better for interiors where there is panelling or much woodwork in the architectural setting.

THE GROUND FOR TEMPERA

The best ground for tempera is gesso. There is no doubt about this, and after years of experiment with others I have personally come back to a kind of gesso ground, whether laid upon canvas or panel. The pigment must have a highly reflective ground in order to bring out its intensity of colour, the light

¹ It is possible that this picture is painted in a size-medium.

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shining up from the white gesso giving the peculiar luminous quality to the picture.

It is obvious that if this translucency is destroyed by rendering the pigment opaque, or the ground a bad reflector, the principal charm of the medium will be destroyed. The solid method does not need a reflector to the same extent, but even here it makes all the difference between a chalky and a pearly effect.

It is true that very beautiful effects may be obtained by a solid method of painting used with glazes and scumbles after the old Venetian fashion and the older oil methods, but as this is exploited the medium becomes more and more akin to oil and less and less typical in its individuality. Nor are the results as permanent as those of the more severe method.

This is because in tempera the diluent is water, and in the case of frequent glazes over large surfaces of roughened canvas the canvas seems to become so saturated that the drying and hardening is slower than ever, and, at any rate in a damp climate, the picture is very apt to mildew. (This can be washed off with vinegar, by the way, without any ill-effect to the picture.)

One should be very careful about using canvases sold as suitable for tempera by the colourmen. I have known these cause the paint to peel off in the most disastrous way.

It may do this after the picture has been painted a year or more.

At one time I thought that the development of the medium, along the lines of early Venetian oil painting, promised much, but the experience of about ten years of experiment has convinced me that I was wrong. The tempera medium has not enough body to show to advantage on a very rough surface; it invariably loses its first superficial richness and becomes thin and meagre in quality when compared with oil; although it is in any case very much more permanent. The result of using a smooth but not necessarily mechanical surface is exactly the reverse, for, especially when varnished after a year or so, it seems to increase in beauty with age. The pictures of Angelico, for instance, are almost invariably much fresher in colour than anything painted subsequently, with the possible exception of the early Flemish pictures.

ITS DECORATIVE QUALITY

It is doubtless a certain precision of handling that gives tempera the peculiar quality that has come to be spoken of as "decorative". Many painters have experimented with the medium, attempting to adapt it to the looseness of handling that is almost universal in the modern use of oil-colour. They have for the most part abandoned it because they could not make

it respond to their wishes in this direction. Nothing will make it respond.

The egg-colour dries almost immediately after it has been applied (though it does not harden entirely for months) and cannot be manipulated on the panel. This fact demands that the painter knows what he wants to do quite definitely before he begins. A defined outline of the composition is therefore necessary in order to get good results. Our present lack of mental discipline renders this excessively distasteful to the "artistic temperament"; the medium is therefore one of the finest correctives of this unpleasant disease. It is a mistake to suppose that precision in actual work in any way prevents emotional expression. It is becoming clear to painters, by degrees, that the emotional or vital quality of a picture lies in the use made of line, notan, and hue as tools with which to deal with the particular material at hand. There are many ways of using them. The actual nervous touch of the hog brush on canvas is one way, available with oil-colour, but there are others, and the precise and careful outline and the juxtaposition of small spaces of glowing hue are others, and especially applicable to tempera.

The modernization of tempera will not be accomplished by trying to combine the free and complex qualities of oil with its own naïve and precise richness of effect. The result would

not be happy even were it possible of achievement. It would be analogous to the harmonization of a Gregorian chant by Massenet or Ravel. It is just the simplicity of effect that architects admire so much in the medium, for it is capable of taking its place with decorum in a scheme of decoration where a modern oil picture would demand the scheme to be made round itself.

There seems to be a modern superstition that the artist can and should only express himself along one well-defined line of work. It is obvious that every medium which reveals another facet of art must enable the artist to reveal another facet of his thought. Because a daisy is seen to be charming must one for ever be doomed to fail in appreciating the peony's very different beauty? It seems then that the modern painter, even if he is not striving to emulate the simple and naïve charm of the early painters, may nevertheless find in tempera a medium that will open up to him an entirely new range of delightful subjects.

Moreover, it is quite possible to read Cennini's treatise without accepting the theological superstitions and other ignorances current amongst painters in his time. Nor is the Italian Renaissance the only period of the medium.

It is unfortunate that the Orient should have

devoted itself almost exclusively to starch and gum, but the mode of composition used, and especially the scale of colour of the average Persian or Mogul illumination, and indeed, of many Northern Chinese paintings,¹ is quite as good a model for tempera work as is the average Italian Madonna; better, indeed, for tempera is especially concerned with colour, and that of the Italians will not compare with that of the East. The Egyptians, too, almost certainly used tempera on their tombs and furniture, and valuable lessons may be learned from these master decorators.

THE QUESTION OF SIZE AND SUBJECT

We soon begin to find that the precision of handling necessary to the medium, and practically insisting on some sort of stippling of the pigment, dictates the main suitabilities as regards subject and treatment.

Every medium has its own place in the artist's workshop and the qualities of tempera define its scope more definitely than do those of some other media. The most successful tempera pictures will be found to be of moderate size; such a picture, for example, as Carpaccio's *Venetian Ladies on a Balcony* may be said to approach the limit in one direction, whilst Mr. Southall has proved that a miniature in a locket may be a thing of joy if tempera be

¹ Many of these are probably painted with an egg basis.

intelligently used for it. It is quite true that the immense "frescoes" on Italian walls are very often wholly or in part in tempera, and the medium may be used on a wall for much larger work than in a picture with good results (Henry Payne's work in the Chapel at Madresfield is a case in point), but in this case it more nearly approaches the effect of fresco, and necessarily forgoes somewhat the richness of colour that is one of its principal charms. It is also true that many Italian walls owe their popularity largely to advertisement and fashion.

At any rate it seems that very large pictures or wall-paintings are more suitably handled in other ways. Firstly, because tempera is not adapted to the covering of large spaces. Its best results are obtained with sable or similar brushes, and by means of some kind of large or small stipple. This is rendered necessary by the fact of its rapid setting after being applied to the panel or wall, and the stippling in the case of over-painting seems to have some sort of effect similar to the polishing of wax, adding much to the quality of surface. It therefore relies for its charm on precision and directness of handling, on delicacy of edge, detail and subtlety of silhouette, and especially on the actual quality of its colour. It is perhaps scarcely necessary to point out that in the case of large mural work the light is never quite

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the same over the whole composition, and often varies very considerably. This in itself gives variety to what may in fact be a flat and uninteresting tone of colour, and to achieve an even tone in tempera is a long and laborious process if the space be of any size.

It is also proved, I think, by Chavannes, that a quiet and pale tonality is the most satisfactory for large wall-pictures, at any rate when closely associated with architecture, and this is not the scale of colour that is best adapted for tempera work, in spite of the current opinion that tempera pictures are "pale". At the same time wall-pictures, if of moderate size and set in such a framing as wood panelling not too far from the eye, would be well carried out in it.

Such work as that of the average early Flemish portrait, more allied to oil in its actual composition, would have been more pleasantly done in tempera, as the rather steel-like rigidity of the varnish work would have been softened by the medium whilst the charming precision of outlook would be retained.

ATMOSPHERE

Most artists complain that tempera is incapable of rendering atmospheric effect. By this is meant a dozen things, as a rule, and it may have no real reference at all to atmosphere. If aerial perspective is meant, it is quite possible

to imitate this effect in tempera if you wish to do so. If what is meant is the loose and vibrant touch commonly applied to oil pictures to-day, then, as was made clear just now, tempera is entirely unsuitable to it. So far as aerial effect can be represented by more or less flat masses of colour with well-defined edges, it can be quite adequately rendered. It must be said, however, that tempera is not a medium suitable for the treatment of violent effects of weather or of light and shadow. The reasons for this are those arising from the qualities of the medium. Intensity of colour, which is the keynote of tempera, should never be obscured by other considerations. The imitation of effects of light and mist, on the contrary, usually requires a pearly or dusty scheme of colour such as is well suited to oil-pigment as now used, and it almost always necessitates broken and indefinite shapes, whereas to obtain the utmost intensity of colour the shapes used must be well defined and carefully arranged. So far, then, as the imitation of light is concerned, the tempera painter, as a rule, passes it by. He is especially concerned with the local colour of things and not with their interrelation or unification by means of light and atmosphere. It is a medium especially suited to the treatment of individual character, and stands midway between the monumental and generic qualities inherent

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in fresco and mosaic, and the more intimate appeal of oil and water colour.

In one direction, however, it can successfully deal with questions of light.

In some of the later colour-prints of Japan, and more clearly, perhaps, in some of Professor C. J. Holmes's oil pictures, we can see the use of colour to express or represent a state of atmosphere and light without any attempt at imitation. There is no looseness of treatment, neither has the modulation of tone anything to do with the result; it is achieved by the actual pitch of colour chosen, and the relation between the different hues. I have in mind especially a print by Hiroshige in which black rocks stand up jaggedly against a yellow sky. They rise out of a green space of colour that is very intense, but much lighter in tone than grass would actually be at sunset. These spaces of colour are chosen so rightly that they convey, much better than the most perfect coloured photo could do, the feeling of the scene. They are quite untrue in the limited sense of the word, but they convey a truth of emotion that is much more really true. Such effects as this, dependent on the subtle choice and arrangement of hue, and not on the representation of actual fact, can often be very effectively treated in tempera, but it is doubtful if even these are quite so satisfactory in tempera as in oil.

A tradition builds on past achievement but

is not limited by it: materials change, they become superseded or unobtainable, but in this case, eggs, go on for ever.

In this book, therefore, I have tried to give a practical and straightforward explanation of tempera-painting apart from any pedantry and retaining only the methods essential to the best results to-day. By the best, I mean those effects which are most suitably obtained by the medium and least suitably by others. The borderlands, which are often fascinating and useful, are, when touched upon at all, mentioned as such and related to the main field; anyone with a sound knowledge of pure tempera can moreover explore these for himself without much direction.

I have not taken much space on such subjects as the preparation of walls for tempera or the various theories about its protection from bad air, etc., as these things are exhaustively treated in other books. I have on the other hand tried more especially to give details that only a practising artist would know, as these will be of special value to the student.

The arrangement of the book has been made more with the thought of its practical use than any other. The logical method of treating any subject seems to be met with impatience at the present time; one is asked to "cut the cackle" and to "get down to brass tacks". Instead of replying that you cannot get brass

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tacks without a previous process of mining, smelting, and so forth, it has seemed best to take the line of least resistance and, to a large extent, to print the book hind-to-fore. The perspicuous reader can always begin at the end, and the running reader will think the way has been made flowery for him. I can only hope it has, and that coming to run he may eventually be prevailed upon to learn how to walk.

There is very little in the book that has not passed through my own experience, which has, of course, been gained a great deal from books as well as experiment. Those I have found most useful for a study of the subject in all its branches are as follows :

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Materials of the Painter's Craft. By A. P. Laurie, M.A., D.Sc. T. N. Foulis. 1910.

The Chemistry of Paints and Painting. Sir Arthur Church, K.C.V.O., etc. Seeley, Service & Co. 1915.

A MANUAL OF TEMPERA-PAINTING

GENERAL

Notes on the Science of Picture-Making. By Sir C. J. Holmes.
Chatto & Windus. 1909.

(It is more than ever essential for the tempera-painter to study the theory of his craft, and this book remains one of the very few that seem to evidence any logical thought relative to the practical basis of Painting. The remaining two books are equally valuable, but are not concerned so much with practice in its generally understood meaning.)

The Truth of Decorative Art. By de Fonseka.

An invaluable but little known work of unusual insight.

Outlines of a Philosophy of Art. By W. G. Collingwood.

A most stimulating and up-to-date expression, by the title of which one should not be deterred.

Dynamic Symmetry, The Greek Vase. By Fay Hambridge.
Oxford Press.

SECTION ONE

TECHNIQUE

SECTION ONE

TECHNIQUE

THE technique of tempera-painting is quite different from other methods of painting as used to-day in that it is essentially a craft which *must* be learned and practised methodically, owing to the nature of the material. It cannot be "played about with" until the student has entirely mastered it.

It must also be remembered that tempera-painting was entirely submerged, roughly after the time of Bellini in Italy, and is essentially the re-discovery of a medium which was cut off in its prime, the secret of its method being lost for several centuries and only re-discovered gradually and with some difficulty by the practical experiments of a few enthusiasts.

For this reason the subject cannot be treated in the same way as a medium such as oil painting, which has had a continuous history, nor like water-colour or pastel which, in their present form, are modern media. Modern painters in tempera sometimes appear to defer in what seems an unnecessary way to mediæval methods, and in some cases obsolete traditions. In many directions these methods have not been—shall we say—enlarged or widened since the time of Botticelli, in others

the nature of the medium makes it impossible to widen them. Again, even now, fifty years after its re-discovery, it is impossible to tell exactly how a good many Italian pictures were painted, for Cennini's treatise, which is by far the most detailed exposition of the method, is annoyingly verbose, repetitive, and sadly lacking in just those points one seems to need light upon. It is, therefore, not easy to exaggerate the importance of the work of modern tempera-painters, for in this medium they have had practically to reconstruct an entire process from a few notes and examples, most of which have been "restored", over-painted, re-varnished or in some way disguised; examples, moreover, belonging to a period in which many other substances were in use and experiments continually being made.

Fortunately there are certain pictures of the early Renaissance that are obviously in pure egg-tempera¹ and as obviously unspoiled. On these it is fairly easy to reconstruct the bare bones of the method, but many of the later works, which exhibit different and valuable qualities, at present seem to escape analysis and leave a large if fascinating borderland of the mysterious in which the student may experiment.

I have therefore divided this part of the book

¹ This phrase presupposes the possible use of size and white of egg with certain pigments.

TECHNIQUE

into sections ; the first will deal with the general theory of the medium, its various forms, Cennini's treatise and other commentaries ; the second will take the student through the entire process, dealing in detail with each part in an orderly way : it will take up in detail the actual pigments from the chemical as well as artistic point of view, and at the end consider alternative methods and materials which would have interrupted the previous part.

This part of the book is necessarily to a great extent a collation of the various discoveries of recent years recorded in the valuable papers of the Tempera Society with the technique described by Cennini. I have also included such experiments of my own which have proved valuable and have been tested over a number of years. It has been impossible always to give credit where it was due : this amongst other reasons is ample excuse for including the seventh section, dealing with the modern painters, almost all of whom have made valuable contributions to the tradition.

The details of process are treated in the *next* section.

THE ESSENTIAL METHOD

Stated in its simplest form the idea of tempera-painting is the use of egg as a material to bind powdered pigments together and to the ground.

The egg first sets, then hardens gradually to a leather-like substance which does not darken with time and which resists fairly well both light and damp: especially when varnished.

This sounds delightfully simple, but if one is left there it is not easy to produce much of a picture.

Should the entire egg be used, or the yolk, or the white? Should it be diluted and with what and how much?

None of these questions are *clearly* answered in Cennini, so that the value of modern experiment soon becomes apparent.

It is generally taken for granted that only the yolk of egg should be used, as a rule, for pictures. The white, whilst making the medium less adhesive, adds nothing of value to it, containing much more water and albumen in proportion and most of the other constituents in smaller quantities.

Professor Church gives the exact quantities of the constituents in a table.

From this it is seen that in the yolk there is a large proportion of oil, 22 to be exact, and of albumen 1, whilst there is only 2 of oil in the white. Egg-yolk is, in fact, an oily emulsion in which the oil hardens as it dries and remains intimately associated with the albumen, which also coagulates and eventually becomes insoluble and therefore a valuable protection to the pigments locked up in it.

White of egg appears to have been used mostly in miniature painting, especially associated with honey and gum, and sometimes for tempering blues, etc. It *may* be ignored by the picture painter.

The question of dilution is next to be considered. Cennini rather vaguely refers to mixing the yolk with water before grinding with the colours, and this in some form is the usual modern practice, but I understand that there is still a traditional method in Italy of using the undiluted egg, afterwards using water as required to paint with. I have seen experiments in this method which certainly resemble some of the old paintings in several particulars, but I have never used it myself, and there seem to be arguments against it. Among these are that the amount of egg in proportion to the colour tends to vary more where the water is not mixed with it in the first instance, also, that the water is not evenly incorporated with the mixture, and an even and homogeneous result seems to be an advantage as regards permanence.

At the same time the actual proportion of water to egg is probably not of much account and varies slightly with different methods. The standard seems to be half and half. The egg is shaken up with distilled water, or, better, ground with it. This produces a medium rather thinner than linseed oil and much less "oily"

which can be mixed with the powdered pigments to form a convenient vehicle. Although there is a large amount of oil in the medium it will not coalesce with other oils unless emulsified with them as a medium, and no linseed or poppy oil must be used on any account in the preparation of the ground. If the tempera colour is applied, for instance, to a canvas prepared for oil painting it will peel off entirely within a few months, leaving the canvas perfectly clean.

The best ground is a mahogany or cedar-wood panel, primed with a thin coat of gesso made of slaked plaster of paris and parchment size. This gives a surface that is smooth, luminous, and almost non-absorbent. All these qualities are essential for a tempera ground.

The smoothness may vary from a decided "tooth" to a polished ivory surface.

A priming of whitening and size is a little less luminous, though often used.

Absorbent canvas (without oil) may be used, but the absorbency *must* be stopped by a coat of size or of the medium, else the paint will tend to peel off. Other grounds will be discussed later.

APPLICATION

The paint is applied as a rule with sable water-colour brushes: though hog brushes may occasionally be used for large pictures.

TECHNIQUE

It sets immediately, so that little fusion can be made between strokes. This at first worries the student a good deal: it is one of the most inherent characteristics of the medium and most of the subtleties of the technique are means for dealing with it—*not* avoiding it.

The two principal methods are the stipple in various forms, and over-painting, which, whilst used also in oil, is almost essential in tempera. Stippling brings the intermediate spaces to the same depth as the dark lines of colour made by the overlapping of individual strokes of the brush, whilst the over-painting tends to even the surface also and to produce that variety and vitality of texture which is one of the reasons for the radiance of colour so precious in the medium. The method of putting one colour over another instead of mixing them is one that has come about for another reason as well. The tempera medium is excessively transparent and lacking in "body", it cannot easily be used with the impasto of oil; it is, therefore, inclined to be thin in quality if used as a single liquid wash (as in water-colour). Though a certain exquisite delicacy and purity is obtained in this way, the quality does not seem to be maintained in its pristine beauty and in any case is not really powerful enough to warrant its many inconveniences compared with water-colour. On the other hand, a number of liquid coats

one over the other enable the painter to obtain (as in coloured glass) successive films of pure colour rather than mixtures, which act upon one another without combining. Mixtures are always made at a sacrifice of purity, and in tempera this seems to be exaggerated; the very fact, however, of the rapid setting of the paint enables these thin films of colour to be superimposed intact, so that they at once retain their own colour and eventually form a homogeneous mass of pigment.

It will probably now be realised that a very definite outline of the design is essential before painting is started. The outlines in this method of rapid over-painting cannot always be determined as one proceeds, or even kept in mind, so that they tend to become vague and indeterminate unless a very definite groundwork is maintained. In oil painting, an outline can be broken, diffuse, or implied, and yet quite definitely revealing shape-character: this is almost impossible in tempera. Even if it were easy it would not be desirable because the colour-quality is such that it demands a certain sort of shape, a shape-character as precise and definite as itself.

Tempera-painting may be quite as expressive of individuality as oil, but the result is obtained differently. The nervous handling of the hog-brush which seems to bring the artist into immediate contact with us is not

possible here. The artist's individuality is seen rather in the original conception and the method of design, the choice of colour, and its method of application more than in any detail of immediate execution.

The law of contraries, or rather complementaries, seems very evident in technical matters, and just as one uses a hard pencil on soft paper and a soft pencil on hard, so here the straightforward and precise method of tempera seems peculiarly suited to the treatment of the less concrete and tangible ideas, whilst with the essentially evasive and nervous oil technique, in which hints and implications are more valuable than straightforward remarks or statements, such transitory and inessential appearances as cast shadows may be made to imply matters of eternal moment.

That is why, perhaps, in tempera, the too literal representation of effects of light and other relative phenomena of natural appearance is instinctively avoided; not at all because this is a mediæval trick but because it is a courtesy to the medium—the artist who desires to use these things can always employ other media.

A tempera picture is most happily conceived as a coloured low-relief consisting of rather small masses of delicately gradated and clear colours. A great deal of to-do has been made about the difficulty of making alterations

as one proceeds in tempera-painting; but the most fuss is made by critics who do not themselves paint, or by artists who have not properly learned their craft. A tempera picture is necessarily a mosaic of preferably small patches of modulated colour definitely limited by an outline (drawn or implied). It is a matter of the greatest ease to erase one of these patches and repaint it. It is quite true that it is not always easy to "botch" it up, because botching is not part of the tempera technique.

This matter is treated in greater detail later on.

Again, to the extent that tempera approaches oil paint it does not deal happily with greys. The greys in old tempera pictures are often very beautiful, but they are not subtle except through the accidents of centuries. They are usually made in the simplest way by a warm glazing over a black and white mixture; they are not therefore suitable for the subtle half-colours of representative landscape where the nuances of the weather make perpetual differences and slight variations essential.

CENNINI'S TREATISE

Cennino Cennini was a minor painter living in Padua in 1398, where the treatise was probably written. He was a pupil of Agnolo Gaddi, the son of Taddeo, the godson and

pupil of Giotto. There was a translation of a part of the treatise by Mrs. Merrifield (1844).

In 1899 the painter Christina J. Herringham made a masterly translation of the entire book and added valuable chapters on Tempera-Painting; Fresco and Early Oil Painting, Grounds, Gilding, Pigments, and Varnishes.

The treatise opens with an account of Creation which continues in this strain, giving us a very vivid picture of the approach of the mediæval painter to his work:

“Then Adam, knowing the sin he had committed, and being nobly endowed by God . . . discovered by his wisdom that it was necessary to find a way to live by his own manual exertions, and thus he began by digging and Eve by spinning. Afterwards he carried on many necessary arts. . . . Now the most worthy is Science: after which comes an art derived from science and dependent on the operations of the hand, and this is called Painting, for which we must be endowed with both imagination and skill in the hand, *to discover unseen things concealed beneath the obscurity of natural objects*, and to arrest them with the hand, presenting to the sight that which did not before appear to exist . . . therefore, and whether through great reverence or love, let all those persons who feel in themselves any kind or manner of knowledge . . . put themselves forward without bashfulness. . . .”

(italics are mine) which seems to me worth a good many modern treatises on “self-expression”.

A great deal of the treatise tells how to make paper, pencils, pens, brushes, and so on, and how to prepare panels and grind colours. Many modern tempera-painters have done a few of these things and it is no doubt the best way of becoming acquainted with one's materials, but it is scarcely to be expected that many will be able to find time or inclination for work which as a rule is better done nowadays by others. The point at which modern equipment breaks down most frequently is in the preparation of oils and varnishes, and in the mixing of paint. These matters only occasionally concern the tempera-painter. Even panels, which are not easily or rapidly made, are often much better done by experienced gilders who have a certain traditional knowledge of sizes and procedure. Cennini's method again may be said to be non-existent. Chapter 87 is headed, “How to Colour Buildings in Fresco and in Secco”—this is a page in length—then follows a “Chapter” of four lines on “How to Draw a Mountain from Nature Well”. This is worth quoting in full (from Mrs. Herringham's translation):

“If you wish to draw mountains well, so that they appear natural, procure some large stones, rocky and not polished, and draw from these,

giving them lights and shades as the same rule guides you.”

Chapter 89, also of four lines, is headed, “How to Paint in Oil on Walls, Panels, Iron, or whatever you please”. The oil technique is continued for about two pages, after which we are introduced to the method of “adorning” walls with gold or with tin.

Such inconsequence is somewhat exasperating, and for this reason the book is entirely inadequate as a modern manual, however necessary it is as a reference book and charming as light reading.

Mrs. Herringham’s supplementary chapters are therefore invaluable. She has sifted out the gold on various technical points and compared it with other early writers of less prominence and with modern chemists’ conclusions. Indeed, such a mass of information is almost embarrassing and again is essentially material for reference. Fortunately her excellent index makes this easily accessible. There would, therefore, be nothing gained by making a parallel encyclopædia of this book; my aim is rather to give a general sense of the possibilities here, and in the next chapter consecutive and detailed instructions for actual procedure in a sound method.

Professor Laurie in his *Materials of the Painter’s Craft* considers several media. Concerning the tempera period he refers to various

treatises and especially to that of Theophilus (twelfth century) which is a bundle of recipes similar to those of the later Cennini. He quotes largely from Cennini and discusses the pigments in use by mediæval painters, but mainly from the chemists' point of view.

Professor Church is even more "chemical", but for this reason is perhaps clearer to refer to on these points. Neither deals with the subject from other points of view. We are not in this book concerned with tempera other than egg, but the egg medium is capable of many diversions. There would seem to be a series of possibilities linking it up with the oil medium and giving a scale of effects corresponding to the variations seen in the old masters. Effects such as those seen in some very early Sienese pictures and also in the work of painters round Venice—Pisanello, for instance—cannot be gained by the pure egg-yolk. On the other hand, they do not resemble oil painting either: they exhibit a surface less like that of a flower (so typical of pure tempera) and more waxy, a little like the modern egg-shell motor enamel. The tones are fused as well as (in some cases) being stippled; the colour is richer, deeper, and more juicy than pure tempera, but has at the same time none of the hardness of oil as seen, for instance, in Lorenzo di Credi's work or that of Antonello da Messina sometimes.

One of the most perfect instances of the effect I mention is Pisanello's portrait in the Louvre of the Este Princess with the background of flowers and butterflies.

The solution of this type of painting I believe to be an emulsion of egg and varnish or egg and oil, or both.

There is certainly a definite statement in Vasari's *Life of Antonello da Messina*, quoted by Mrs. Herringham, that appears to make this unlikely. He says that many painters had experimented in various ways and "reasoning on it, searched for such a thing, no one had found any good way, neither by using varnish nor other kinds of colours mixed with the temperas." Mrs. Herringham herself evidently accepted this, but it is rather daring to accept Vasari unconditionally on anything!

The suggestions of mixtures with size or honey do not meet the case. No doubt there were such, but they would not produce the effect under consideration. The mixture or emulsion of egg-yolk with oil and with varnish is, however, a perfectly simple operation, though it may have escaped these writers.

When I was in America Mr. Ezra Winter, who learned tempera-painting in Rome, gave me a recipe he had received from an Italian as a traditional one, including a very small quantity of copal varnish with the yolk of egg. As he gave it me it was rather vague, but

I used it with considerable satisfaction for several years, when I came across Mr. Tudor-Hart's excellent paper given before the Tempera Society in 1922. In this he discusses the chemistry of tempera and especially considers emulsions, giving recipes for four: egg-yolk and linseed oil, the same with copal varnish, and two others not made with egg. Since then I have used both the egg emulsions and find them extremely useful. The method is, very baldly, to grind the yolk of egg with ten drops of spike oil of lavender. This is then ground with the same quantity of linseed oil and again with the same quantity of water.

In the case of the varnish emulsion, the procedure is the same until the lavender oil has been introduced. It is then divided, three parts are ground with linseed oil and one part with an equal quantity of copal; the four parts are then ground together. The exact method in the *Papers* (see Bibliography) should be followed. I have myself experimented further, by using Blockx's amber varnish (which is dissolved in linseed oil); in this case I have not used any other oil with the egg in addition. I have also used poppy oil, as has Mr. Edward Wadsworth, in this way. Personally I prefer the amber-varnish emulsion.

This medium is a little different from pure egg-tempera in working. It can be fused more readily as it does not set so quickly, it has more

the effect of the old pictures referred to, and the amber varnish to a great extent counteracts the objection to mixtures. In oil the greys made of cobalt, vermilion, and yellow ochre retain an extraordinary luminosity and clarity of colour, and this is at least partly maintained in the egg emulsion, so that in this case one can have at least a *part* of one's cake and eat it. The use of this medium, as I say, tends to approximate that of oil. I have myself used various quantities of the ingredients and thus obtained different effects. It cannot be too often said that the beauty of painting depends on two complementary things. The rigid use of one's craft and the enjoyment of its qualities (which are limitations only to the extent that they divide it from others and thus give it character), and secondly the infinite variety of different media and crafts which enlarge the scope of the painter's range. Some media are suitable for one range of ideas, others for another, and the poverty of painting is due as much to the employment of unsuitable media as anything else. Much modern criticism is futile because it speaks from the basis of one ideal medium, or at most two; whereas a medium is only ideal for the expression of a limited range of ideas, and an artist who has command of a dozen media has twelve times the potential range of an artist limited to one.

The old tag about Jack-of-all-trades expresses

a fallacy invented by the mentally lazy or the insufferably jealous.

The student of tempera-painting is therefore well advised first to learn thoroughly the standard technique of pure egg-tempera and then to try at least two or three variants. It is instructive to work out a single design in several different media and in the same colour-scheme. Comparison is then much easier and more valuable than indiscriminate experiments.

VARNISHING

Pure egg tempera, when properly executed, has a very lovely surface, approaching that of the natural egg-shell. Unfortunately, it is for at least a year very easily damaged by scratching, so that it is almost essential to glaze it.

For this time also it is not really dry and therefore it is unwise to varnish it. Whilst it is drying it is very much better to have the picture loosely put into its frame and *not* sealed with paper, etc., as the air should be able to circulate about it to carry off moisture. If the picture is sealed it frequently develops mould, especially in a damp season or in a damp room. This tendency to mildew is always present, at least for several years, and is the chief reason for varnishing—which actually spoils the natural beauty of surface.

If mould appears (usually as small whitish

spots) the picture should be sponged lightly with vinegar or dilute acetic acid and then carefully dried with a soft cloth. A slight warming and polishing with a piece of silk will be just as well. After this, mould will not normally recur, but if so the same process must be repeated. On no account should water be used.

In about a year's time the picture should be hard enough to varnish, and this may be done as in the case of oil pictures, but with even greater care. In London and smoky cities it is usual to varnish tempera pictures, though I have found that whilst the cold *glass* always deposits water and attracts dirt, so that it quickly becomes filthy, the less cold surface of tempera has the characteristic of resisting both to an extraordinary degree. It is probable, however, that sulphur and kindred objectionable features of our modern cities will cause trouble, so that on the whole a good varnish is to be advised. What is good and bad in varnishes is not easily come by. If one reads the chemists, the impression is soon gained that nothing is of much use to resist the fatal light and damp. Practical experience does not bear out such pessimism, though doubtless their view extends over centuries rather than decades.¹

¹ In the case of oil and vanish emulsions the picture should need no further treatment,

I usually content myself with polishing the picture with "Ceronis", a wax-varnish made by Lefranc, which I am told is little different from boot-polish. This gives a pleasant surface, and wax seems to be smiled upon by the chemists. Care must be taken, however, not to put it on thickly and also not to use it until the picture is quite hard. If applied too soon, the colours will "bloom" and even come off, through the action of the petroleum in which the wax is dissolved.

Varnishing completes the tempera, and we will next consider the practical process of picture painting in detail from beginning to end.

SECTION TWO
THE METHOD

SECTION TWO

THE METHOD

First Steps

THE procedure here given is a normal traditional process, using modern materials and methods where they are as good as the old ones and avoiding as far as possible alternatives. Alternatives frequently arise, however, so that I have adopted what is, I hope, the most straightforward course in such cases, and made sub-sections. In this way the reader may easily omit what he wishes and go on to the next main section. This is less disturbing to most than consulting an Appendix for alternatives.

ORDER ESSENTIAL

In an oil painting as made to-day, it does not very much matter whether the painting is started straight away or whether a charcoal drawing is first put on the canvas. Apart from a rough sketch this is all many painters do in the way of preparation.

Such a casual attitude towards one's craft is impossible in tempera. It is impossible to achieve the beauties of the medium otherwise than by a methodical use of the materials, and

A MANUAL OF TEMPERA-PAINTING

the more exact the method, the finer the quality will tend to be.

THE RIGHT CONCEPTION

This does not for a moment imply a mechanical or dead-looking result. If the reader is acquainted with folk songs and dances he knows that the "feeling" or emotional content is fully provided *in the form itself*, and that all the exponent needs is to render this "according to recipe", when the result will duly convey its message. The tempera craft belongs to the same range of ideas and achieves its results in much the same way. The painter no more needs to display his virtuosity in applying the paint than does the singer in rendering *Searching for Lambs* or *The Cruel Ship's Carpenter*.

The painter does, however, have to construct his picture, and thus begins with a right conception of the idea for the vehicle used. This cannot, of course, be taught, being between the painter and his God; one can, however, indicate what cannot be well done, and also, to some extent, what can.

The tempera medium has certain qualities, and these should be fully exploited whilst putting irrelevant ones firmly on one side.

It is essentially for precise, definite, clear-cut conceptions. This does not mean merely a

careful copying of natural appearance. It is odd that a picture, say by Dürer, is often considered a sort of uninspired transcript of facts, whilst a decoration by Tiepolo or a canvas by El Greco is vaguely thought of as an inspired improvement on nature, an "organic construction" on his part, simply because he has tortured the normal relationship of objects (usually by ignoring their essential character) into some general scheme of his own. It may be safely said that unless such a general scheme arises out of the supreme functioning of the objects used in their intensest and *therefore most natural* state, it will be irrelevant and false, however grandiose, imposing, and even stimulating, to the ignorant.

It is true that what the artist sees as a natural and significant arrangement may be beyond another's vision and may therefore appear a distortion, but only to the mind itself distorted by egotism does it appear other than a normal statement of fact—however far it may transcend the facts we usually choose to contemplate.

The definite and precise is not, therefore, either less or more admirable than the indefinite (in manipulation not in conception), implied, and suggested: though Blake, our greatest visionary, plumped for the definite and even "wiry". The right manipulation is largely a question of medium.

Tempera, then, calls for a precise and definite *conception* of the idea—and all ideas are definite.

PLAN

It also demands a pre-arranged and very carefully considered plan, because the plan is not easily changed, except in small details, as one proceeds, and also because of its other technical methods. This plan is usually jotted down first as a small sketch, giving the essential points of the composition contemplated, the objects to be used, under whose “obscurity” we are going to “discover unseen things”. This may be made in any medium, but usually in pencil or whatever comes handiest and most intimately to the artist. It may not be out of place here to remark that the outline of a design gives its vitality of movement, which is the primal thing. It should not, however, be carried too far without considering the formal relation of objects, the dimension in which the design is to be placed, and this generally implies an indication of the principal masses either of light and dark or of colour. The final relations of colour cannot be given accurately on a smaller scale than the picture, and depend also on the definite shapes used. It is, therefore, always and necessarily an experiment that one prepares for as best one can and leaves at that.

STUDIES

Having made one's plan, the next step is to make studies for all the parts. This is where the modern artist jibs, as a rule.

One can only maintain that unless he is entirely independent of study, and can draw anything required from memory, the painter in tempera must paint from studies. If he tries to work directly from the human or any other organism, he cannot pre-arrange his design, which is essential, nor can he select what is significant only, nor can he attend to technical matters. Direct painting is possible only in mediums relying on accidental relations of shape and colour for their *design*; this may be an admirable method, but it is unsuitable in tempera.

In making these studies the general conception of the picture, the "unseen things" that are, however, quite definite in one's thought, must be kept in mind. There are any number of different facts that might be used about any object. The painter must, therefore, select the few necessary ones that emphasize the particular qualities he needs, and represent the object accordingly. What would be essential about a tree in one picture—its dark greenness and massive roundness—might be quite irrelevant in another, in which the

delicate variation of colour in each separate leaf might be valuable; whilst in another, the pattern of its tracery against a golden sky might be used.

The fewer the facts about each object (consistent with making it credible) in the picture, the more likely success will be; for it is largely by choosing the essential or significant and presenting this unconfused, that the "unseen" is implied.

On the whole it will be found that studies for tempera work are best made in pencil, crayon, or silver-point. Sometimes it is very useful to execute these on a toned paper and indicate the lighter parts with white. The colour is often so intimately bound up with the "unseen" department that it is best not to pay too much attention to the actual subtleties of colour in objects. It has much more power of emotion and of meaning than has shape, whilst the average person observes it so inaccurately that he is indifferent about its correctness. He knows the shapes of things better and insists on seeing what he knows.

The artist, therefore, is fortunate in being able to use his colour for symbolic reasons when he desires, and these are, of course, the facts most essentially significant about the objects depicted. Colour should never be arbitrary, except in the elementary crafts, any more than shape should be distorted.

THE METHOD

THE CARTOONS

Studies completed, the whole composition must be carefully planned and the picture drawn with detail and accuracy sufficient to trace on to the panel.

There are two main methods of cartooning.

FIRST METHOD

Use stiff cartoon paper and then a tracing which is transferred on to the panel. Or,

SECOND METHOD

Use thin or "detail" paper which can be transferred direct.

The second method saves a great deal of labour, but it precludes incessant erasures and demands a good deal of directness and skill in the draughtsman, otherwise on a large picture there will be very little of it left by the time it is ready to transfer.

THE ABSTRACT PLAN

Until the last hundred years or so, no painter could have conceived of starting a picture without first making an abstract plan of it. This corresponds to the skeleton of an animal. It is the supporting basis necessary to carry certain movements (muscles) and to allow them to function with the greatest freedom.

This is not a perfect parallel perhaps

(although one knows very little about the construction even of an animal), but it does at least convey the importance of the thing which is beginning once more to be realized.

Unfortunately, few orthodox teachers seem to be aware of any but degraded echoes of sound methods of planning, and the unorthodox affect the untraditional experiment by which one goes a long way to get a very short distance. The essential basis of abstract design is very simple and straightforward and has been fully explored in the past *as a basis*; the only new element that has been discovered is that of using the so-called abstract relations of lines, angles, etc., to express emotional qualities, i.e. as a means of beauty. *This conception is a purely modern one*, for the shapes we refer to as abstract in primitive pattern were as closely associated with natural objects to the designers as photographs are to us. Later they were used merely as scaffolding. This subject is far too serious to be treated here in a few paragraphs: it is a subject in itself. One can merely give a few hints that the student may follow out for himself. There have so far been three methods discovered for unifying a design, and by this one means either a whole consisting of many diverse parts unified into one, *or* conversely, one whole subdivided into many diverse parts; it doesn't matter which way you think of it.

THE METHOD

Firstly, by the periodic recurrence of the same or similar parts over the entire field—example, all repeating patterns—visual basis the square or parallel lines.

Secondly, by the grouping of different individual parts about a focus or centre—example, all (falsely) so-called “symmetrical” designs—visual basis the circle.

Thirdly, by all the individual parts being planned on and obedient to a system of proportion permeating the entire composition—example, all actually symmetrical design—visual basis the proportional rectangular or curved spiral.

N.B.—This method, restricted to Egypt and Greece, has recently been re-discovered by the late J. Hambidge and set forth principally in his book *Dynamic Symmetry, The Greek Vase* (Oxford Press).

We have at present no conception of any other orderly way of making out of diverse parts one harmony. These methods have been exemplified:

1. By all primitive peoples.
2. By (chiefly) the Gothic craftsmen in all materials.
3. By the Egyptian and Grecian craftsmen in all materials.

The first and second states of design are static, in the sense of the design being complete

within itself and of returning on itself as regards movement.

The third is dynamic in the sense of implying a consistent and similar continuation of movement beyond itself. It is a whole in that the bounding line regulates the proportion but does not limit it, its characteristic being that of infinite progression in either direction.

The composition, then, should now be planned on a skeleton of one of these three bases according to the character of the work. The second method is the one most naturally suitable for tempera, but the early stages of the third are equally suitable and give a greater freedom and latitude to the artist.

Because of certain technical considerations making the manipulation of large "empty" spaces difficult, and also because of its preference for precise and definitely presented ideas, it will be found that the full use of dynamic movement is not advisable.

Vast spaces and the titanic movements of elemental forces are not subjects best expressed in a rather small compass in gay colour and by a precise and definite medium, and these are examples of the themes usefully employing the full possibilities of symmetry.

N.B.—Such methods as linear and aerial perspective, whilst to some extent *affecting* composition, are really methods of implying

verisimilitude to nature. Because they are based on appearances and not on (symbolic) fact they tend to cramp the artist and obscure his thought. In any case they have no actual relation to symbolic design and only the greatest artist can conquer their limitations.

THE CONCRETE PLAN

The skeleton plan should now be lightly redrawn on a new piece of paper, in pencil.

Everyone gradually devises his own methods, and as long as the necessary results are obtained it makes little difference how one sets about it. What we need is a perfectly complete outline drawing of the proposed picture.

One method is to transfer the plan in a different colour so that it does not confuse the finished drawing. For instance, it may be transferred by graphite transfer paper and the drawing made in a coloured pencil. This is not a good method if erasures are to be made (as they are almost certain to be). Another is to go over the transferred plan with coloured ink and make the drawing in pencil.

If the preliminary studies and abstract plan have been carefully made the cartoon should not prove difficult. As a rule it is a happy process, and delightful to see how charmingly things fit in to a well-grounded plan. The ill-disguised torture undergone by painters

of the later Italian schools in twisting their groups into triangles has no counterpart in any straightforward method of symmetry, which itself suggests the most spontaneous and interesting arrangements. The adaptability of natural shapes to dynamic arrangement is due to the fact that they are both planned on the same system of proportion, whose basis is (superficially) economic stress.

This fact works in two directions, but the results are not the same. I spoke just now of groups twisted into triangles: this is what Professor McColl had in mind when he wrote: "Turner's design . . . is not a rhythm forced on objects from without or uncertainly apprehended in them. It is an eye for their own principle of construction, their private rhythm." Now it is obvious that unless there is one universal system of proportion, individually varied in each particular object, the only result of the foregoing in practice would be a chaos of conflicting rhythms. Either the artist or "nature" must "force" a unifying element on them. Again, Mr. Arthur Symonds is considering the same problem here (*italics mine*): "Modern painters have tried to do with the aid of nature what the old painters did without it: *to find the pattern and rhythm of their pictures in nature itself rather than in their own brains*, and on their own palettes. It is not merely a question of seeing things as they are . . . it is the deeper

and more difficult question of getting nature, seen frankly, into the pattern, instead of coming to nature with one's pattern ready-made."

As a matter of fact, with a knowledge of symmetry in all its phases, the artist's method should be to see nature *in terms* of the system of symmetry most suitable to his immediate need. The Aztecs saw nature in terms of repeating symmetry, the Gothic craftsmen in terms of static centralized symmetry, the Greeks in terms of dynamic symmetry. In either case the system used was natural to the artist. One obvious shortcoming in modern work is that no system is natural to us and we have very little command of either.

This point is stressed because whatever the point of view of the painter in tempera it *must* be definite. I believe, myself, that truly seen one comes to nature with one's decided pattern to find the *same one* there: so that there is no question of squeezing or twisting nature nor of abandoning one's own conception; the two should be one or something is lacking in the vision of the artist.

Some painters prefer to make very complete sketches, and in this case they will have little work to do on the cartoon: others make the slightest possible sketch and allow their conception to grow as the studies are made. Still others find much inspiration in the development of the abstract symmetry.

In any case, by the time the cartoon is finished the picture must be entirely planned out as regards outline, and outline is an essential in a cartoon, even though it may in some cases be lost to some extent in painting.

The question as to whether the gradation or modelling should appear or not in the cartoon is one for each painter to decide for himself. There is little to be gained by adding colour, which can have no relation to that of the picture if it be merely indicated in crayon or water-colour, and if it be done in tempera it is already the picture.

If detail paper is used, a pure outline drawing is much the best form for a cartoon, with, possibly, slight indications of relief or gradation, as the case may be.

TRANSFERRING

Italian Method

The Italians seem usually to have transferred their drawings, which were on stiffish paper, in the following way. The outline was pricked through with a needle at short intervals; the drawing was then pinned to the panel and the design pounced through with powdered pigment. The drawing was then removed, and the lines re-drawn with (carbon) ink or paint.

Modern Method. No. 1

If the drawing is on cartoon paper it must

THE METHOD

be traced. The tracing is then fixed to the panel and over a sheet of (graphite) transfer paper and the design traced again with a very hard pencil or metal stylo. In this method the lines may be found to be very slightly incised, and if this is objected to the pounced method may be used.

Modern Method. No. 2

If the cartoon is on detail paper it is used as a tracing and transferred direct.

THE GROUND

The cartoon being finished, the next consideration is the ground of the picture. This may be one of a dozen different things, the most common being a wall, a panel, and a canvas.

THE WALL

If the painting is to be on a wall the greatest care must be taken in preparing the surface, and this is fully treated by experts in the *Papers* and in other reference books, so that there is no need to go into it here at length. The main points to be guarded against are damp and impurities in plaster, etc.

Tempera does not on the whole seem quite so suitable for wall-painting as for work on

panels, although the wall brings out the freest qualities of which the medium is capable.

THE PANEL

Cennini's method of panel preparation is still largely followed, with variations. The main points to be noticed are the maintenance of rigidity. Warping is a factor to some extent discounting the good qualities of wood as a backing. It may be obviated to a great extent, if not entirely, by securing strips of wood to the back of the panel transversely to the grain; by fixing the panel on a frame fitting up to the edge at the back, and by covering the back either with the same gesso as the front or by a good priming of white lead, oil, and copal.

The surface of the wood (whilst pleasant to work on) proves unsuitable as a ground even if sized and primed with tempera, for the grain invariably swells and opens with the application of the paint and shows unpleasantly unless the panel be quite large. In any case, it tends eventually to discolour the picture as it browns with age.

For this reason, and because eventual restoring of the picture is facilitated by it, the usual practice is to size the panel and affix strips of linen across the grain: this is better than using one complete piece, as it is less likely to come off and also holds the gesso

better. The Egyptians used sawdust and glue for a similar purpose; this is probably just as good as linen, especially for large panels. When this foundation is dry, the gesso is put on in *several thin coats* (Cennini says eight). This method is also explained at length in Cennini, the *Papers*, and elsewhere.

The gesso is best made from parchment size and plaster of paris, which *must* be thoroughly slaked for at least a month. This is more luminous as a ground than the alternative whitening. Some painters add marbledust, which adds to the luminosity and gives it an indefinable texture; others add pumice powder, which gives a different tooth, more gritty, and is not luminous at all.

A great variety of surface is possible.

A pleasant finish for large panels is made by leaving brush-marks in the gesso, another by applying a rough paper or canvas (but if any oil is used to prevent adherence it must be entirely removed and a coat of size given before any paint is applied). Some painters like the last coat of gesso to be brushed on to make air-bubbles which leave tiny pinholes; this texture was much affected by Cayley Robinson for his oil paintings, and may be very useful, but it is only valuable for very thin painting. The Italian ideal was a surface as near to polished ivory as might be. In this case it must be rubbed down with fine glass-

cloth or pumice, a linen cloth, then silk, and may finally be burnished with an agate. This smoothness of surface, disliked by most painters to-day, is apparently the most permanent for tempera. It will soon be found that after a coat or two the surface, of whatever nature, becomes less and less smooth (unless it is kept so by the method of working), the slightest unevenness becomes exaggerated, and the painting itself develops others, so that a perfectly even surface and especially an evenly gradated space is an achievement of difficulty in the usual method of working.

The finished panel should be of such hardness that one can just scratch the surface with the nail. In this condition it is very slightly absorbent. If it is definitely absorbent the paint (curiously enough) will eventually be almost certain to peel off. Consequently it is best to wash over the surface either before or after transferring the drawing with at least one coat of size, or diluted egg-medium which may have a little paint in it—enough to tint it any desired colour. This should be very faint, however.

The question of the use of thick plywoods as a basis is one that has not been sufficiently considered. It of course depends to a large extent on the quality of the wood and the glue. If these are both good there would seem no reason against it, whilst the tendency

THE METHOD

to warp is lessened. If the glue is poor or the wood badly seasoned, the end of the picture is swift and sure.

CANVAS

There is nothing against the use of canvas if it be well primed, and it avoids the tendency of wood to warp.

Joseph Southall uses an ingenious method which would seem to protect the picture as well as it can be done. He primes an open-meshed homespun linen canvas so that beads of the gesso come through to the back. Both sides of the canvas are then coated thoroughly, so that the canvas is entirely locked up in the priming, which cannot come off either way. The most it can do is eventually to crack a little.

As a canvas of this sort becomes virtually a panel there is no advantage in the usual wedged frame, and a rigid frame with cross-bars may be used. This tends to become heavy in the case of a large canvas.

The surface in this case may have a canvas finish or be treated as that of panels.

SILK

Several modern artists have used silk to work on; this precludes the necessity of gesso, but it

also brings with it difficulties of another nature. We all know the dark-brown colour to which silk relapses and which we admire so much in ancient Chinese paintings. Whilst admiring these low tones we may forget that our own efforts will look very different when the ground has faded to this colour. It is true that the Chinese used only the frailest medium and the thinnest possible film of pigment—quite insufficient to protect the silk. It may be that a fairly full tempera will keep the light colour of the silk to some extent unimpaired, but this is extremely doubtful, and the painter is wise who plans his design with the probability in mind of its eventual tone being a dark brown under his colours.

PAPER

Paper is quite permissible for small work, though it has the disadvantage of absorbing damp and must be protected at the back. Its surface is not perhaps very good for tempera, which is pleasanter on something extremely hard: but some painters like it. It should certainly be lightly primed with the medium before use. It will no doubt darken with age to some extent.

METALS

A burnished-gold ground is a beautiful surface for tempera, and was largely used by the

early painters even when it did not show at all as gold. The first coat is a little difficult, but after that the surface is pleasant and the effect of colour gorgeous if intelligently used. It is, of course, entirely unsuitable for representing any atmospheric effects.

ALUMINIUM

Professor Church suggests aluminium panels as a possible ground for tempera. The metal is not changed by the colour, and has other advantages.

Aluminium foil applied to panel should prove as serviceable as gold, but of course the colour would not always be suitable, any more than is that of gold.

FIXING THE DESIGN

At this point corrections can most easily be made by a simple erasure with *some* kinds of rubber or (preferably) with stale bread.

When the design is transferred it may be fixed by spraying with dilute medium (which is rather difficult to do evenly, as it does not evaporate quickly like fixatif); it may be very delicately washed over with medium, or, much the best if most laborious way, re-drawn with paint.

If it is left as it is the lines will not remain clear under a general priming, which is often

necessary: but if this is not desired there is no particular need to fix the outline; it can be re-drawn as one goes along.

Our cartoon is now on the panel, the stage is set, and the exciting moment of colour decisions is at hand.

PREPARING THE MEDIUM

Actually, the medium will already have been prepared to finish the panel and for the transferring. The methods are as follows.

STANDARD METHOD

Use only new-laid eggs.

Break the egg over a cup; let the white run through but retain the yolk in the shell. If the egg is fresh you should be able to pick up the yolk by the piece of membrane adhering to it and put it in the palm of the left hand. Roll it into the right hand and wipe the left on a cloth. Repeat this until the membrane is dry. Now pick it up again, hold it over a slab of ground glass and puncture it, retaining the sac in the fingers. Remove any portions that may have fallen with the yolk. If the egg is not fresh, or is of poor quality, the container will be too weak to carry the weight, and the yolk will be mixed with it. The only thing to do in this case is to separate it as thoroughly as possible by straining.

To the yolk now add water gradually, drop by drop, mixing it in with a *glass* muller or *ivory* palette-knife until the same amount of water as of egg has been mixed. This is the maximum strength for grinding with the powder colours. The alternative is to grind the colours with water first and then to mix with the pure yolk. In either case the paint should be about one-third water, one-third egg, one-third pigments. The medium is now put into a wide-mouthed bottle and corked.

There are several methods used to preserve it. One is to put in one drop (not more) of formalin to each yolk.

Another is to rectify the alkaline reaction of the egg, until it is neutral, by dilute acetic acid or vinegar. This should on no account be used with ultramarine blue. (This is a few drops more or less.) Emulsions using varnish keep good very much longer than does the egg alone.

FIRST ALTERNATIVE MEDIUM

All pigments do not temper well with the same medium: it is therefore reasonable to adjust one's medium to some extent to the palette desired. The pigments, for instance, available for true fresco are very limited, but that does not mean any lack of beauty in the medium. Quite the reverse, for it is just this severity of colour which helps towards the

grand and monumental character of a frescoed wall. So that if the painter has a commission to execute in which these qualities are called for he will, if possible, choose fresco. It is a commonplace of observation that a palette of varied, gay and, in themselves, lovely colours is not conducive to a serious or thoughtful subject, and vice versa, so that even if fresco were unavailable, the wise painter in the above contingency would choose some medium suited especially to earth colours, or would restrict his palette to them.

This similarity of composition or otherwise in pigments has a very definite effect on their permanence. It is easily seen that an opaque earthy paint such as yellow ochre will not get on happily if allied to a thin jelly such as rose madder, and it requires but little experience to know that they behave quite differently. One needs many times the quantity of the same medium to approximate to the other in consistency, and even then the two will for ever pull against one another, literally, as in other ways: it is far better to use them with their own kind. The old masters were fortunate in one sense in being limited to a few pigments, mostly of a similar character; and whether this was from choice or necessity we do not know. As Mr. Tudor-Hart so clearly points out in his paper, read before the Tempera Society, on "Mediums and Pigments", there

are two main factors in the choice of a vehicle—its tractability, allowing the artist easily to manipulate his colour, and its binding quality, which fixes the colour and keeps it protected from decay.

These qualities can be found both in vegetable and animal divisions.

As examples in order of *binding* quality we have the Siccative Oils—vegetable and animal:

Casein (cheese glue)	= animal
Parchment size	= animal
Egg-yolk	= animal
Fig-juice	= vegetable
Gum-arabic	= vegetable

and so on.

Most of these can be used in combination, so that the more tractable but lacking in binding power can be supplemented with less tractable but powerful binders. Thus the binding quality of linseed oil is, by its combination with egg-yolk, made more tractable and, in proportion, less liable to discolour. The egg, having the quality of saponifying its mixtures so that they can be mixed with water, is the most easy of all vehicles to use. The essential point in these mixtures is that nothing should be added that *destroys* the binding quality of any constituent nor that affects its drying in either direction.

Many of the materials in use to-day do these things. Turpentine, for instance, makes oil more tractable and destroys its binding quality. Soft resins are used to increase its charm and destroy its elasticity. Siccatives make it dry quickly, and eventually *cause it to crack and powder.*

ALTERNATIVE EMULSION (Tudor-Hart)

Ingredients

Yolk of egg

Oil of lavender (ten drops per yolk)

Linseed oil (washed and sun-clarified) (equal quantity to yolk)

Water (twice the volume of the yolk)

METHOD

Separate the yolk as before and place on ground glass. Place one drop of spike oil of lavender in the centre of it and mix rapidly with muller or knife. Add all the lavender oil drop by drop.

Collect the thickened mass into a covered receptacle and measure out an equal volume of linseed oil. Place a small quantity of the egg and lavender on the slab and grind in one drop of linseed oil as before. Continue to four drops, and then add more egg mixture and repeat until, in progressively larger amounts, all is ground.

The whole should now be stiff like soft butter, and is ready for tempering all pigments ground into the state of paste with water, except Ultramarine, Cobalt and Cerulean blues, and the orange and yellow Cadmiums, for which an addition of copal varnish is required. The medium is added in the same quantity as the pigment-paste and ground with it on the slab, the amount varying slightly with different pigments.

For use in painting to dilute colours, this medium requires the addition of an equal volume of water, which should partly be *ground in on the slab* and the rest mixed in the bottle.

ALTERNATIVE No. 2.

For tempering the above-mentioned pigments or if preferred for general work.

(Mr. Tudor-Hart notes that the copal varnish should be made by dissolving hard copal resin in tetra-chlor-ethan, mixing it with half its volume of raw linseed oil and then completely evaporating the tetra-chlor-ethan *without boiling*. Copal varnish made with Litharge and boiled oil is improper for artistic use.) After mixing the egg and lavender oil as before described, divide it into four equal parts. To three parts grind in an equal volume of linseed oil as described; to the remaining part grind in an equal quantity of copal varnish, then grind the two mixtures together.

ALTERNATIVE No. 3.

This recipe was used for *mural* painting in the Monastery of Beuron, South Germany. Its method of use is also given later (it is forbidden by Cennini, for panels, to use the white of egg). The entire egg is used, the white and yolk mixed together, a teaspoonful of linseed oil is then added, with a few drops of vinegar, and the whole well shaken, then strained through muslin.

The medium was kept in a corked bottle, and mixed as required, "water" being used to thin down.

This is a rather vague recipe, but seems to have worked well.

The blues in mediæval times were tempered apparently with size or gum, but the use of copal, as above, obviates this.

The above alternatives will provide ample scope for experiment.

SECTION THREE

CHOOSING THE PIGMENTS

SECTION THREE

CHOOSING THE PIGMENTS

THE pigments to be used in tempera-painting may be much the same as those for oil. The student will very soon find, however, that his pet oil-colours or water-colour pigments are almost unrecognizable in the new medium whilst others acquire a new beauty.

The handling being so different, other qualities are demanded, and these are supplied by other pigments. At the same time, the range of permanent colours is rather small in any medium, so that the lists necessarily are similar.

The chief difference seems to be this:

In oil painting, owing to the comparative clarity of mixtures due to the solidity of the paint and for other reasons, very few pigments suffice. As already noted, mixtures in tempera are best avoided when possible, and therefore the largest list of pigments is needed. These may not all be required in any one picture, of course, and indeed should not be so used. In this case the student needs to acquaint himself intimately both with the pigments themselves, their possibilities in mixture, and *in over-painting*, and then to make a series of palettes suitable for certain definite kinds of work, which can be varied as required.

The treatment of flesh is always a point of importance, because of its curious equivocal quality of colour. In tempera-painting, as a rule, no complete *imitation* is attempted, so that many difficulties disappear. It is quite possible to represent flesh, of course, under all sorts of conditions of light, but this is not as well done in tempera as in other media, and the wise artist will accept the traditional methods in this matter. What is very beautifully done in tempera is to suggest the varied character of flesh colour by two carefully chosen main colours complementing one another as foundation and over-painting. (This is also seen, of course, in early oil painting.)

This question will be dealt with separately in Section Four; it is merely mentioned here as it influences the choice of pigments considerably.

FURTHER EFFECT OF METHOD

The effect of the peculiar method is further seen in the necessity for choosing under-colours and over-colours for the same result.

I mentioned just now the fact of difference in character seen in pigments such as earths and the vegetable extracts such as madder, rendering their mixture inadvisable. This does not always apply, however, to tempera handling, because a thin and more transparent

glaze is often very useful over a dead-looking and earthy under-painting. The films of colour being intact and setting separately keep the pigments apart and so largely discount the objection to their use in the same picture. Where such are advised in the same palette, therefore, a mixture is not necessarily intended.

As it is essential for the beginner to practise with easy examples before attempting a picture of importance, I have noted a few palettes suitable for these first exercises. Such ranges of colour are often all that is needed for important works, and are an easy if timid way of achieving an harmonious effect.

RESTRICTED PALETTE NO. 1

Flake White, Yellow Ochre, Ivory Black, Light Red.

Flake White

This colour has a doubtful name because of the possibility of its blackening when exposed to sulphurous air, etc. Many of these theoretical chemical notions about colours, even when they are borne out by experiments, are, I believe, misleading. No doubt if you hang Flake White over a sewer or stove it will blacken, but in ordinary conditions it seems very doubtful as regards tempera pictures. All I can say is that I have never noticed the least

change in it in examples over a period of twenty years—and these sometimes treated with considerable neglect. It appears to mix with vermilion also with impunity.

The addition of white changes the character of pigments more in tempera than in oil.

Yellow Ochre

Under this head I include many colours—mostly simple iron earths going under various names of similar character, such as Oxford Ochre, Raw Perigord, Golden Ochre, Roman Ochre, etc.

The tempera-painter, desiring a wide range of hue, will collect every variety he can lay hands on, as the yellows are always rather a difficult problem. It is possible to obtain a range of yellows with ochres alone, from a pale and quite greenish hue to the deep orange yellow of the Roman and Mars varieties. They work well in tempera, and some are usable as glazes. I believe they tend to become more transparent with age.

Ivory Black

This is a colour that is perhaps rather disappointing in tempera. Blacks are never very satisfactory by themselves in this medium. They tend to be dead and grey in effect, and need under-colour, and often glazes also if any depth is required. I prefer myself the

black oxide of Cobalt where a powerful opaque colour is needed. This is a new pigment. (See note on Potter's Colours.)

Ivory Black is most useful as a glaze.

Light Red

This colour should be Burnt Yellow Ochre, and varies much in hue. It is a useful bright red, is very permanent, and works well.

RESTRICTED PALETTE No. 2 (Flake White is implied in all palettes)

Raw Umber, Burnt Umber, Terre Verte, Indian Red, Vine Black (Blue Black).

Raw Umber.

The Umbers, natural earths, are of immense importance in tempera-painting. These, with Terre Verte and the Ochres, go under the majority of pigments to give them vitality or power.

Raw Umber has a bad name in oil, and indeed is not a particularly useful pigment in any case; but its place in tempera is quite different: being used chiefly as an under-colour, its unique quality of cool brown is invaluable. It varies from a greenish to a neutral brown.

Burnt Umber

Also very useful.

Terre Verte

This invaluable pigment should be a natural green earth. It is supplied in two varieties, *Terre Verte* and *Old Terre Verte*. The first is cool grey-green, the latter much yellower. Both are invaluable as under-colours, but neither works very well, though better than in any other medium except fresco. A little admixture of white is generally necessary.

Indian Red

This colour varies a good deal; it should be of a decidedly purplish red, very intense, and working almost like a transparent colour very smoothly, though it is actually opaque. It has a curiously even texture, and is somewhat lustrous. Mixed with white it is definitely purplish.

Blue Black

This very light pigment is useful in tempera in a restricted palette, especially as a glaze and when mixed with white. In the latter case it is almost blue, and tells as blue in contrast with other pigments, especially when pale.

RESTRICTED PALETTE No. 3

Ochre Brun Matte, Mars Violet, Ultramarine Blue, Opaque Oxide of Chromium.

Ochre Brun Matte

This is a brownish Ochre of lovely hue, little known, and made by Blockx, the Belgian colour-maker.

Mars Violet

A permanent red purple resembling the earths in character, and almost exactly the colour of "Tyrian" purple dye. A "dull" but lovely hue of the same range as the Ochres and Terre Verte.

Ultramarine Blue

In its natural form of ground Lapis Lazuli it is quite the loveliest colour.

The artificial variety (with copal varnish, size, or gum) varies in colour from greenish to an intense purple-blue. The latter is not often obtainable and colour-makers apparently try for the purest range of hue.

It works well, but is rather hard in colour and needs under-painting. The blues are the weakest part of the tempera palette. Indigo, which is the loveliest after Lapis Lazuli and Cobalt, is unfortunately not permanent, though it is not by any means fugitive in an ordinary light. I have examples painted over five years that have not appreciably changed. If glazed over and used with the copal emulsion, I still think it might last a considerable time, but it is not a safe colour.

Opaque Oxide of Chromium

This green is rather brighter than Terre Verte. Sometimes it is a very lovely bluish green, but more usually yellower. It works well as an opaque pigment and "covers" well. It is not perhaps generally useful, but harmonizes well with Mars Violet and Ultramarine.

RESTRICTED PALETTE No. 4 (Intense)

Under-Colours

Cadmium Yellow
Aureolin
Old Terre Verte

Over-Colours

Raw Sienna
Vermilion or Cadmium
Red
Cobalt Blue
Viridian
Violet Mineral (1 and 2)
Ruby Madder

This palette gives a range of the most gorgeous hues possible if properly used. Although consisting only of ten pigments, it will cover the larger part of the spectrum at its intensest. It is a good contrast to the foregoing quiet palettes, which, however, are much easier to use and better to learn with. I have purposely chosen new pigments, though several of those already treated might well be substituted.

Cadmium Yellow (opaque. Used with copal or size.) (Daffodil Yellow, Aurora Yellow, etc.)

Considered permanent except in its lemon

variety, and for this reason Aureolin[†] is included in the palette, as this gives greenish hues of great clarity. Lemon Yellow (which is quite permanent as barium chromate) is also a good substitute and is opaque, but it is not, for that reason, so generally useful as Aureolin, which is naturally rather transparent and can be used either way. This colour is one that it is very rarely possible, in its purity, to introduce in a picture, being one of the most difficult to harmonize, but it is very useful under other colours.

Aureolin

An intense greenish or "primrose" yellow; transparent.

Old Terre Verte

Already mentioned. Distinctly transparent and of a rather gelatinous tendency.

Raw Sienna

Valuable as a transparent yellow of a rather hot character.

Vermilion.

Perhaps the best known of all pigments and one of the most valuable. It has a bad name for blackening, but I have never experienced this in tempera. It works well, but is not

[†] Must not be mixed with Indigo.

good for mixing, except with Flake White, which it resembles in character.

Viridian (transparent oxide of chromium)

The purest permanent green. Resembling Ultramarine, Aureolin, and Alizarin Crimson in character.

Very valuable mixed with White, Aureolin, and as a glaze over warm neutral pigments.

It may also be mixed with black.

Violet Mineral (Nos. 1 and 2)

These lovely violet colours—one redder than the other—are considered permanent. They are chiefly useful for flowers and flower-like effects. Being amongst the most intense pigments obtainable, but without the rawness of the aniline-dye principles or rouge Phœnician, as they may be used as opaque or transparent in tempera.

Ruby Madder

This is a very intense madder of a slightly more purple cast than Alizarin Crimson.

It covers better than most madders, and is not very gelatinous; indeed, it may be used as an opaque colour, and is valuable for this reason. It has a beautiful equivocal quality of hue.

Cadmium Red

A pigment very similar to Vermilion in colour and character, but not quite so "soapy" in texture; recently introduced. It is considered quite permanent, and might often take the place of Vermilion where there is any doubt of the permanency of the latter.

Cobalt Blue (temper with copal, size, or gum)

The loveliest blue of a definitely permanent character. It is quite different from artificial Ultramarine of any variety, being perhaps rather more opaque and less powerful, but having an exquisitely ethereal character that is difficult to describe, due probably to the texture of its particles. Where Ultramarine may be crude, Cobalt never is; even when used alone it has quality. This does not quite apply to "Barton's" Cobalt, a valuable pigment lately introduced and a potter's colour. It is immensely more powerful than ordinary Cobalt, is greener, and does tend to be crude when used alone. This is probably due more to the rather raucous effect of blue green *as a hue* than any actual difference in texture.

BLUE PIGMENTS

Ultramarine Ash

A beautiful grey-blue. It should be made from the residue after extracting Ultramarine



A MANUAL OF TEMPERA-PAINTING
from Lapis Lazuli. It does not work very well.

Ceruleum Blue

An opaque green-blue of good quality; does not work very well in tempera.

Prussian Blue (Green-Blue)

A powerful and useful blue of doubtful permanence.

Antwerp Blue

Similar.

GREEN PIGMENTS

Vert Composée, 1 and 2, Blockx

Good greens, one similar to Vernalis, and one yellower. Not always obtainable.

Vernalis Green (Potter's)

A good palish green, of great purity and clarity of colour.

Cobalt Green

An opaque and rather weak blue-green, similar to Ceruleum in character, between it and Vernalis in colour.

Emerald Green

The purest green pigment, but unfortunately not stable, being blackened by impure air and

by mixtures, as with Cadmium Yellow. Professor Church says that: "In oil it is practically permanent," so that it is fairly safe to say that it is so in tempera if used with the copal and oil emulsion and well protected with medium. It is a very valuable colour.

RED PIGMENTS

Potter's Pink (Potter's Colour)

An opaque dull pink similar to Terre Verte and Ultra Ash in character and quality. A useful colour.

Various Madders and Lakes

These range from Rose Dorée to Alizarin Crimson in colour. They are useful for flowers, etc., but not generally necessary, and the permanence of the paler ones is rather doubtful, as they have so little body.

Venetian Red

A powerful and rather raw red, between light red and Indian red.

VIOLET-RED PIGMENTS

Rouge Phénicien

A colour supplied by Lefranc.

Very intense and of the aniline character. Gelatinous, and does not mix. It is apparently

a dye, but is said to be permanent. It is the only pigment which approaches the intensity of some flowers.

Purple Madder

Varies a good deal.

Similar to other madders, and useful as a glaze.

VIOLET PIGMENTS

Cobalt Violet

A lovely hue, but pale and lacking in body. Opaque in a weak way. Is useful for flowers, etc. Similar in character to Cobalt green and Lemon yellow.

BROWN PIGMENTS

Cappagh Brown

Recommended by Professor Church.

A natural earth, cooler than Burnt Umber.

Brown Transparent (Blockx)

A colour similar to Vandyke Brown or Transparent Burnt Umber. Permanent.

Bistre

Very doubtful as regards permanence.

A good grey-brown of great beauty.

I have personally found it stable, but it is not irreplaceable.

POTTER'S COLOURS ¹

These permanent colours are specially prepared (in powder) for tempera-painting. The list may be obtained through the Secretary of the Tempera Society, or from 377, Sandycombe Road, Kew Gardens, Surrey.

PIGMENTS IN GENERAL

Having made the student acquainted with a series of pigments of especial use in tempera-painting, we will now complete the list in the usual way. No colours are listed that are not reasonably permanent. Authorities differ so much on this point, and the actual pigments supplied differ as much again, that each must make his own decision as to which to use and which to avoid. The limited palettes already given are not chosen from the point of view of permanence (though I believe they are so) but from their value *as tempera colours*.

The main list now given is mostly just as permanent, and many colours will be preferred, but even here I have put their value in the medium above other considerations.

¹ The colours made by Blockx and Lefranc are stocked by Messrs. Lechertier Barbe.

WHITE PIGMENTS

Zinc White (Chinese White)

Very permanent; thin and poor in quality of colour; useful for glazes.

Titanum White (Potter's Colour)

A new permanent white of enormous covering power, but objectionable in quality and tending to emerge as a dead surface. It entirely lacks the lustrous and rich quality of Flake White.

BLACK PIGMENTS

Already mentioned.

YELLOW PIGMENTS

Naples Yellow (Potter's Colour); opaque

A greenish variety rather useful under greens and some reds. All the potter's colours are permanent. Others have been mentioned.

YELLOW-RED PIGMENTS

Orange Vermilion

The only approximate substitute for the much lovelier, but insecure, red lead.

Similar to ordinary vermilion in character. It is rather more red than orange.

Burnt Sienna

Powerful and hot colour of red-brown-yellow character.

CHOOSING THE PIGMENTS

RED-YELLOW PIGMENTS

Mars Orange (Blockx)

A good earth orange. Opaque. Between Roman Ochre and Light Red.

Mars Yellow

Similar, but less orange.

Orange Perigord (Potter's)

A very vivid Burnt Ochre, similar to the above, but redder.

Cadmium Orange

Intense and useful for flowers.

GRINDING

The mixing of the powdered pigment with the medium must be done by some process of grinding in order thoroughly to combine them. For small work it is only necessary, however, to do this with an ivory palette-knife or a small glass muller on a slab of thick ground glass.

Some colours will absorb more medium than others, so that the amount cannot be given accurately, but it should be about the same volume of medium as pigment.

When mixed thoroughly the paint should

be normally about the consistency of cream, and is put into a specially constructed palette or into saucers. These palettes may be obtained in white china, and are made with small deep hollows for the paint. In the case of shallow saucers the pigment will be found to evaporate too quickly. A flat white palette is advised for use between the receptacle and the panel, for trying and mixing. An old white plate will serve very well, or a white tile. Everyone evolves his own pet dishes. A jar of water is required for washing out the brushes, but the paint is better diluted with distilled water.

A fair-sized bowl of preferably warm water and a sponge will be needed to clean the glass between the grinding of each colour. It should also be dried.

This may sound a nuisance, but to the experienced worker it actually takes a little longer than setting an oil palette, and is delightful work. One rarely needs to grind more than half a dozen colours at a time, as they are best prepared within a few hours of being used.

Tempera is the most economical of media, and the small amounts of pigment used will astonish the painter accustomed to see half pounds of oil colour fade away in a few hours. I still have in some cases quite a large amount of colour remaining from powders obtained twenty years ago in *ounce* packets, though they

have been in fairly regular use ever since. This is partly due to the size of pictures. A wooden tempera panel is unwieldy if much larger than two feet square, and though canvases may conveniently be considerably larger, the medium is most suitably employed on rather a small scale. The film of colour is really very thin as a rule, and half of it is medium, so that the actual pigment used in each picture is negligible.

SECTION FOUR

PAINTING

SECTION FOUR

PAINTING

As we noted before, the extreme transparency of the colours renders under-painting almost necessary: it is at least preferable.

The methodical and really serious student will make many experiments either before or alongside his first attempts at picture-painting. This is not a tedious business to anyone who loves his materials, and no one else ought to be encouraged to use tempera.

The theory of under- and over-painting in tempera is that a complementary or contrasting hue intensifies and at the same time gives quality to the one above. Thus an intense yellow gives extreme brilliancy and beauty to purples painted over it; it does not neutralize them, as one might suppose. The first exercises, therefore, should be towards acquainting oneself with at least a few typical examples of such effects. The paint should be used in two ways for each exercise, first pure, and then mixed with white. The results are quite different. A few suggestions are given on page 112.

The next exercise might be to acquaint oneself with the effect of mixtures, beginning with either restricted palette. In order to be able to do this in a useful and orderly way for reference, it is well to keep a sketch-book

of cartridge or other paper for this purpose. The Pigments should be named and arranged

Number	Under-Colour	Over-Colour
1.	Terre Verte Yellow Ochre Raw Umber Cobalt Blue	Vermilion Vermilion Vermilion Vermilion
2.	Terre Verte Yellow Ochre Raw Umber	Cobalt Blue Cobalt Blue Cobalt Blue
3.	Aureolin Burnt Umber Aureolin	Ruby Madder Ruby Madder Purple Madder
4.	Terre Verte Naples Yellow Ultra Ash	Potter's Pink Potter's Pink Potter's Pink
5.	Yellow Ochre Raw Umber Burnt Sienna Cobalt Black	Ivory Black Ivory Black Ivory Black Blue Black

in the following manner so that each is mixed with every other:

PAINTING

PALETTE NO. I

Example.

	Flake White	Yellow Ochre	Light Red	Ivory Black
	(Pure Pigment)			
Flake White	(With White) —————→			
Yellow Ochre	(With Yellow) —————→			
Light Red	(With Red) —————→			
Ivory Black	(With Black) —————→			

HOW TO BEGIN TO PAINT

Take a brush full of either pigment and try it on the palette. When it has such amount as not to have a blob of liquid colour at one end, but will make a more or less even stroke, try it on the gesso panel. (Hot pressed paper mounted on card is quite good enough for first experiments.)

This stroke is made to the full extent of which the brush is capable; it is then left, as nothing is to be gained by messing it about. The next stroke is made as close to it as possible; it should just touch. In practice it will either overlap in places or there will be white spaces

between. The white spaces should be filled up with smaller strokes. This should be proceeded with until an even tint is made of defined size.

When it is sufficiently set the unevenness may be rectified by a second coat done in exactly the same way and the process continued until the required surface is obtained. The result is a mass of the utmost strength of the pigment used. If paler masses are required we proceed as follows :

HOW TO MAKE A PALER HUE. No. 1

The colour should be diluted with water to the required amount, either in a separate hollow of the palette (if a large amount is needed) or on the flat mixing palette.

Proceed in the same way as before, except that care must be taken not to allow any part to become too dark, as, of course, if proceeded with, it may ultimately become as deep as the other.

It should be remembered that in all dilutions any tendency to fade is exaggerated, and a very thin film of colour is almost certain to lose some of its value. This is also increased to appearance by the hardening of the medium. The juicy freshness of the wet paint is in no case retained entirely, some pigments losing more than others. Pure egg-medium loses most,

of course, in this way, becoming almost dead in surface in the case of one thin coating.

HOW TO MAKE A PALER HUE. No. 2

The colour is mixed with white to the required hue, or slightly deeper, for it will lose a little in drying. The result in this case is quite different in character. The luminosity so apparent in the preceding exercises is lost, but the evenness of hue is more easily obtained. Some pigments retain more translucency than others, and all retain more with Flake than with Chinese or Titanium White. In any case the paint regains some of its luminous character with time, especially if varnished or polished, so that the difference is more apparent than lasting, the pure colour losing some of its translucence, and that mixed with white gaining a little with time.

As a rule in actual work the amount of white—generally present in small quantities—varies a good deal in each picture and in each colour. Generally speaking, more white is used in under-colours than in glazes, unless it is important that the utmost luminosity of the gesso ground be retained. This luminosity is seen at its most valuable either when uncoloured or below intense colours of great transparency. It is of little importance under Vermilion, for instance.

A MANUAL OF TEMPERA-PAINTING

MATT SURFACES

A perfectly even matt surface may be obtained by the use of the stencil-brush, the paint being dabbed on until it is evenly distributed, coat after coat. This is mainly useful for large surfaces and for under-painting. The quality of the paint when used in this way is less interesting than in any other method; it is the variety of texture or hue in a colour that gives it vitality, brilliancy, and luminosity, and this method has neither. The dabbed paint destroys its luminous character, and no variety of texture or hue is possible in an even tint.

This does not much matter in an under colour, however, for, as a rule, the preliminary painting is kept perfectly flat, the necessary gradations being introduced later. In this way the modelling is kept crisp and fresh.

GRADATION

In tempera-painting a great deal of the beauty of colour is due to subtle gradations within the defined masses, and this is inextricably mixed up with the question of modelling and the amount of representation of light allowed. Obviously no hard and fast rules can be laid down for this matter, which must vary indefinitely from work to work and artist to artist.

One can, however, say this, that the more each mass in a composition is treated as a separate colour-space, gradated within its own hue and unaffected by its surroundings, the more luminous and beautiful in colour the picture will tend to be. This is entirely borne out by the Italian school, for instance, and, of course, by the Oriental schools, where it is the invariable practice. That is to say, the medium is unsuitable (comparatively) for the representation of violent cast shadow effects (where they interrupt the local colour-scheme) and the relative counteraction of one coloured object by another.

RELATED HUES

For instance, the colours of different fruits in a dish are all affected by one another. The orange is dulled by the green apple next it, and this is yellowed by the grape-fruit farther on, which is in turn made red on one side by another apple, and so on. All this is true, and may be of interest in some cases, but it is not necessary to state every visible fact in every picture—indeed, this is not art at all. We are at liberty to use as few facts as we wish *provided* (and this is where so many fall) we take them in their logical order. It is not legitimate to choose some advanced fact, such as the effect of aerial perspective on the colour of trees, and then to omit some simple and more

fundamental one, such as the fact that objects appear to decrease in size as they recede. It is perfectly legitimate for a painter *in any age* to *present* his trees all the same size "near" and "far", but it is not so for him to colour some of these green and some blue with the object of expressing distance. The only reason for the tree appearing blue is that it is farther off, a fact which is first indicated by diminution in size, because shape precedes hue. You can have defined shapes without any colour; but you cannot have varied colours without shape: each must end somewhere, even if it ends gradually.

It is, therefore, quite legitimate to stop short of the use of aerial perspective, and also of the relative effect of one colour on another: facts which can be more easily and happily rendered in the oil medium. It is a very good plan to keep always in mind this idea that the artist's business, in part, is to see facts *in terms of his craft*. The shape of the same tree is and ought to be quite different when presented in a wood engraving, a pencil drawing, and an oil painting.

As a matter of fact, certain aspects of aerial perspective, such as the blue distance, are now so obvious to everyone that they may be used almost in the sense of local colour, and a painter introducing this quite suitable fact might legitimately ignore the reflection of a blue sky

on a white marble balustrade in the same picture.

OVER-PAINTING (*Continued*)

This being so, the utmost strength of the pigment concerned is generally reserved for the deepest "shadow" or parts of the mass, but this is not always the case and depends on the nature of the under-colour. Supposing we have to paint a cobalt-blue drapery which we are basing on a coat of raw umber. If this is dark—anything approaching its possible strength—it will be darker than the utmost power obtainable with cobalt blue; it will, therefore, be necessary, if the deepest parts are to be blue, either to model the umber first and then glaze this with cobalt, or to make the darkest folds of pure cobalt over the umber, and to use more and more white for the lighter parts. Both these methods should be tried; they give entirely different results. A mere glaze will not be sufficient in the first case, for it will obliterate a good deal of the modelling whilst yet being insufficiently blue. It will need considerable going over with a range of blues to achieve the right hue. In the second case we have this problem: the darkest shadow will be the warmest hue, because it will be changed by the brown under-painting, the paler colours will get colder and colder as they approach white.

This is rarely desired by the painter and some way out must be found.

One is by mixing a little yellow (probably ochre) with the white—that is, actually lightening the blue with cream or pale yellow. In this way the slight variation can be rectified without being obvious (this applies also to graded vermilion). Another method is to glaze the finished modelling with some warm colour—very much diluted, leaving the darker parts as they are. The colour of the shadows in Italian painting is a surer guide than any other detail of handling towards discovering the medium employed. With oil painting comes the dark and then the black and grey shadow. As long as tempera held the field, the shadows were scarcely shadows at all, but gradations of colour; darker, but not less (frequently more) intense than that of the lighter parts. This method of gradation is exactly the opposite to that employed by painters reproducing the actual effect of light, where, except in the cases of coloured or reflected light, the shadows are normally cooler than the lights.

The result is to give a curious glow and radiance to the picture, placing it at once in that land “where it is always afternoon”. It is largely due to this method that the early pictures have their air of remoteness from common life which is so necessary for the subjects usually treated; and when I said at the

beginning of the book that tempera, although very precise, was suited to the expression of rather abstract ideas, I was also thinking of this characteristic, which removes it at once from the "cold light of everyday" literally without making the picture unreal or impossible to the intelligence.

It is obvious that this is not always desirable, and some painters, such as Wadsworth, have consistently used cast shadows—even black ones—and still retained the essential character of the medium; but it is a dangerous road for the beginner.

In the case (often occurring) of vermilion, the colour is so intense and so luminous, in spite of its opacity, that the treatment requires much consideration. The under-painting of Terre Verte gives a very beautiful red, but if this is used for the half-tones, the pure vermilion shadows are, of course, much more intense and much lighter unless great care is taken to keep the Terre Verte pale. The Italians obviated this either by darkening the folds of drapery, etc., with a different red, such as madder, or by warming the light parts considerably. The almost transparent and flaming effect sometimes seen, notably in the panel by Pesellino, *A Miracle of St. Sylvester*, lent by the Worcester (Mass.) Museum to the Burlington House Exhibition, 1930, must, I think, be due either to the use of red lead by some protective pro-

cess or to the vermilion having become more transparent with age and the pale warm under-painting showing through. There is no pigment known to-day, I think—certainly no lasting one—with which we could obtain exactly this effect, a pale, transparent, and pure orange-red. Under- and over-painting is the normal method of procedure, as understood to-day and as was generally practised in Italy so far as we can see, but the method is open to many variations by the emphasis of one point or another. Let us consider two of these.

PURE TRANSPARENT PAINTING

This method uses no white—or only sufficient to prevent some pigments from being mere stains. It leaves the luminous white gesso for the high lights, and either the pure pigment for the darkest parts or it may under-paint these a little to change the hue or gain power.

There is no doubt at all that this method, which is rather rare, and is used often by Mr. Joseph Southall, does give the maximum of radiance and beauty of quality to the picture. It necessitates a rather low tone of very intense colour, because the light parts cannot be too thinly covered or they will become weak after a time. It resembles some sorts of water-colour in method, although the result is, of course, much more powerful in every way.

The great beauty, both of surface and hue, of which this method is capable is largely due to the repeated stroking and re-painting of the surface by minute applications of the sable brushes. As it is done wet the result is not, of course, due to burnishing, but the appearance is similar. Some of the early Sienese pictures are apparently done in this way.

THE OPAQUE METHOD

On the other hand, Mr. Spencer Stanhope used an entirely opaque method which he learned from a Signor Rocchi in Italy.

In this method (Chinese) white is mixed with all colours from the lightest to the darkest.

The paint is mixed very methodically, much as Cennini advises. The darkest shade having been decided, the lightest is next mixed. Half of each is then mixed to form a middle tint, and so on to as many as are required.

In painting, the middle tints are first put on, the darks and lights being placed when this is set, and half-tints finally added.

This method gives an effect such as we see in Botticelli's *Birth of Venus*, and is useful for large canvases and anything requiring a pale tonality. It loses in richness and luminosity what it gains in "atmosphere".

The great disadvantage or difficulty is that the paint, when so much white is used, changes

a good deal in tone as it dries, and it is quite difficult to foresee the effect one is producing. It is not the method to start off with.

In this case under-painting is reduced to a minimum, as it has very little effect of hue, and is mainly useful as fixing the modelling (as in flesh).

The flesh painting done in this method (which fuses into a more homogeneous surface than finer work) is often extremely beautiful in colour so long as it is pale in tone. The deeper tints almost invariably tend to become unpleasantly chalky.

The method is also much broader as regards handling, and the colours may be fused more as they are applied. Altogether it is a process adapted to the needs of mural painting on a larger scale than that of the average tempera picture.

The range lies between these two extremes, and each painter will use the medium in the way that suits his individual need.

FLESH PAINTING

Because of its indefinite colour and constant change of hue, the method of flesh painting has always been a rather special branch of technical procedure, and this is more necessary in tempera than other media, because of its more methodical character.

THIS IS CENNINI'S METHOD

“Take a little verde-terra, and a little well-tempered white-lead, and go twice over the face,” etc.; then, the “rosy tints” must be of cinnabar (vermilion), white and verdaccio (a mixture of ochre and black). Three gradations of this are prepared, “laying every tint in its right place in the face”. The green ground should just show through the colour in the darkest parts. When the face looks “nearly right” make a fourth lighter tint, and paint the prominent parts of the face and the very high lights with a little pure white. The outlines of the upper eyelids, the eyelashes, and nostrils are done with black, or black and red in the case of features and hands.

There is no doubt that a fairly light ground of Terre Verte is the most generally useful for flesh, but there are several other methods. Over this the warm colours are painted very wet, as a rule in many washes or coats. Vermilion and white, especially, over old Terre Verte, almost suffice in some cases, the green being sufficiently yellow, but in others, yellow ochre, etc., may be mixed with the red. Light red is a hotter colour and, to my own thinking, too bricky for flesh; but much depends on the amount used and the colour desired.

Indian Red is valuable sometimes for the darker parts, and especially for accentuating, as it is in oil colour. For some fair complexions

rose madder may be used, especially for lips and cheeks, but great care is necessary not to get the flesh too pink.

ALTERNATIVE FLESH. No. 1

UNDER	OVER
Terre Verte	Indian Red, Burnt Um- ber, White

ALTERNATIVE FLESH. No. 2

UNDER	OVER
Raw Sienna, Black, White	Venetian Red, Raw Umber, Ruby Mad- der, and White

ALTERNATIVE FLESH. No. 3

UNDER	OVER
Terre Verte and White	Vermilion, Raw Peri- gord, White, Ali- zarin Crimson

The flesh may also be first modelled in Terre Verte and white and then glazed with the warm colours. This method is more likely to retain its correct ensemble; if the colour changes, it will most likely all change together. In the cases of flat under-colour there is a tendency for the green to show through more and more in the dark portions. This can be seen in most early pictures.

ALTERNATIVE FLESH. No. 4

In Piero della Francesca's *Baptism* in the National Gallery the green tint has come through as noted above, owing probably to the fading of the very thin red film over it. This picture is typical of tempera technique. It will be noticed that the *St. Michael* and the *Nativity* are quite different in method, especially in the flesh-painting: they both seem to be done either in oil or, more likely, a varnish-emulsion. The *Nativity* especially is very German in feeling and technique. The flesh, a great deal of which is only prepared, shows a very useful alternative procedure for tempera of any kind as well as oil.

The flesh is grounded with a golden brown such as Ochre, Brun Matte, or Raw Umber, or even Raw Sienna, and this is then over-painted with (probably) madder and white. The effect obtained by Piero is obtained by mixing Burnt Umber and white or Brun Transparent and white and using it very thinly for the shadows. This gives the curious milky-blue colour which is so typical of some kinds of flesh in shadow. The lighter parts have a trace of yellow ochre in them as well.

I suspect that the lips and cheeks were originally more pink. The traces of colour as they appear now would be best given by Indian Red or Purple Madder, either as a very thin glaze or with white—very thin.

ALTERNATIVE FLESH. No. 5

The true Flemish method seems to have been a completely modelled under-painting in blue-black and white or even blue and white; the over-colour being in red and yellow and white as before. This is more like the pale northern flesh and needs madder or vermilion for lips and cheeks.

ALTERNATIVE FLESH. No. 6

UNDER
Black and White
(modelled)

OVER
Raw Perigord, Yellow
Ochre, Purple Mad-
der, and White

ALTERNATIVE FLESH. No. 7 (Red)

UNDER
As above

OVER
Naples Yellow, Indian
Red, Venetian Red

ALTERNATIVE FLESH. No. 8 (Pale)

UNDER
Terre Verte, White

OVER
Ochre, Brun Matte,
Purple Madder,
White

These palettes will cover most of the useful flesh tints, but, of course, the colour of the

picture as a whole will dictate this matter to some extent.

OTHER SPECIAL DETAILS

LOADED LIGHTS

The Italian pictures mostly seem to have used a heavy colour, probably Flake White, for their lights, and indeed these seem as heavily loaded as oil in many cases.

The tempera-painter to-day does not as a rule use his colour so heavily, it seems unsuitable to the medium, and it may be that some emulsion other than pure egg was used in such cases. Size, for instance, or varnish.

The egg-varnish emulsions seem to produce naturally the sort of fusion one notices in the *Nativity* of Piero, mentioned above, and the pictures of Pisanello and his school. This is quite different from loaded colour such as one sees in Piero di Cosimo, for instance, or even Domenico Veneziano sometimes. Pisanello's technique resembles enamel in surface, and is almost certainly done with some varnish-emulsion or wax medium. Simone Martini's work is similar in surface. Loaded lights when at all heavy are more suitable on a canvas ground than on gesso, but they seem to belong essentially to oil painting.

A MANUAL OF TEMPERA-PAINTING

SCRAPING AND SPONGING OUT

Much can be done by the experienced worker with the sponge and knife.

The sponge can only be used effectively on a large scale work or for large surfaces unless the exact space required to be taken out is cut out of stiff paper: the sponge will then take it out cleanly. This is not very easy if the paint is too thick.

The paint, when thick, is quite easily scraped down to the gesso. It comes off almost like a paring of cheese, and leaves either the pure white gesso (stained sometimes faintly with some under-painting), or, if the surface be very uneven, there may be left pockets in which the first coat will stay. This, on a large panel, may often be used effectively as a texture and the object modelled on that, if pale in colour, such as white drapery or a white or golden cloud, etc. Or the ground may be built on again as at first. Lines of white, such as highlights on stems, masts, and similar objects, or such things as a white net, may easily be scraped out of a dark ground and afterwards coloured if desired. It is much easier and often more permanent to use this method as a white line or delicate shape, such as a flower on a deep ground, is very difficult to paint thickly, and the under-colour will almost certainly come through unless it is quite heavily painted. The light parts also of a pale piece of work such

as drapery are often pleasantly scraped out, but only if the paint is quite thin, otherwise the result will be coarse and crude.

USE ON CANVAS

Where a definite canvas grain, thinly primed, is used, the paint may be used almost like thin oil-colour, and similar effects be obtained, except that the lights will not be so heavily loaded. Hog brushes may be used if desired also.

Light tones may be dragged over the surface rather heavily, leaving the texture of interstices dark, and this may in turn be glazed and re-worked on opaque colour. The result of this method is decidedly weaker than a similar use of oil, nor does it bring out the full beauty of colour, but it gives a different surface quality that has its charm. Very much finer canvas should be used in any case than for oil painting if the texture is to be shown.

PAPER

The texture of paper may be similarly exploited, and the colour will adapt itself to the material to some extent. On a heavy-weight paper, such as 240 lbs. with a hot-pressed surface, it is quite possible to wash it on almost like water-colour, very fluid, and it will some-

times obtain a delightful surface-texture. My own experience is, however, that the full beauty of this is not retained, and it tends to become flat and uninteresting in time, compared either with water-colour or normally painted tempera. The nearer the paper approaches a gesso surface the more satisfactory it seems.

HISTORICAL

HISTORICAL

THE historical aspect of tempera-painting is very interesting, but, being quite inadequately mapped out, it is scarcely worth while considering at length except from its renaissance in Italy in the thirteenth century.

We know that the egg medium was probably used in Egypt and the other early civilizations, but nothing definite seems to be known about it. Professor Laurie, for instance, says in relation to Egyptian painting:

“It is quite probable that egg, both the white and the yolk, would also (as well as gum) be used.” He admits that the references in Pliny about the classical use of eggs are just as vague and inconclusive, and can only say that “Egg, gum, or glue could well have been used”.

The egg medium emerges as the normal one with the works of Pietro Cavallini, Duccio di Buoninsegna, Cimabue, and others in the thirteenth and fourteenth centuries. The Cennini treatise gives the detailed method in use at the end of the fourteenth century, but the medium changed a great deal after, and it is of this period, in many ways the most interesting, that we have so little data.

It was from Greek craftsmen, no doubt from Constantinople, that Giotto is said to have learned, but he marks the beginning of an epoch rather than the end, for his painting

is already different in quality from most of the Greek work I have seen. As a rule, the twelfth- or thirteenth-century painting has a much more lovely surface than that of the fourteenth (with the exception of certain Sienese painters). It resembles wax in surface or cellulose enamel, and is extremely like that of the work of the Veronese School headed by Pisanello. I think myself that this is due to the presence of amber or copal as an emulsion with egg, but I have no chemical grounds for this opinion. It is more likely that the earlier painters used wax than copal or amber, so that the method might quite possibly be tempera "varnished" with wax and polished. One example, especially distinctive, is a *Madonna Greca* in the Pinacoteca at Perugia. The student should compare the Sienese pictures of that date in the National Gallery, especially those of Duccio (c. 1260-1339) and Ugolino da Siena (d. 1339). Nos. 1339, 4191, 1317 might have been done with an almost undiluted pure egg medium, but this is not now considered a durable method, and the durability of these pictures is obvious. In No. 1330, a transfiguration, we notice a very interesting treatment of the draperies. In this picture the figure of Jesus is treated in the conventional Byzantine way, that is, the drapery is broken up into small pleats by gilded lines, obviously imitating the cloisons of enamel-work; Moses, Abraham, and

the disciples, however, as being presumably less sacrosanct, are treated in the "modern" method, the folds being modelled in light and dark. The same thing may be noticed in the *Annunciation* below. This is straightforward tempera.

All these pictures are fairly well fused, uncracked (apart from the gesso), and extraordinarily unspoiled as regards colour.

The mist seems to lift with Giotto, and we see a steady development of the medium until the end of the fourteenth century, that is for only about a hundred years.

Here it is impossible to think of tempera-painting apart from fresco, especially in Florence, for each influenced the other in many ways, not always to their advantage. As a matter of fact, the two media are inextricably mixed when we consider wall-painting, for the "fresco secco" is nothing but egg-tempera used on plaster walls. This is treated in detail by Cennini, more clearly than some of his subjects.

The important difference between the two methods is that in Buon Fresco the pigments are very much more limited than in tempera, and may be used in a much paler key, thus being suitably employed with stone architecture and for large surfaces. Tempera, on the other hand, is much more satisfactory for use in small architectural detail where it can

be framed in wood-panelling, etc., either *au naturel* or gilded, and painted as in the mediæval decorations.

Mantegna's series painted for the Paradiso room of Isabella d'Este at Mantua, a model of which is in the Victoria and Albert Museum, South Kensington, gives a very good idea of the sort of decoration suitable for tempera. Mantegna generally uses oil, and it is not intended that this type of Renaissance design should be emphasized here, especially in the detail; the general size and arrangement is, however, a good indication of suitability for tempera work. It is a much more intimate medium than fresco. One may still see in Italian houses painted work done in tempera, such as the room in the Palazzo Davanzati in Florence, which is a stimulating example of its more domestic value.

Owing to the wholesale destruction of images at the time of the Reformation, the early English school of tempera-painting is mostly lost, but there are a few wall-paintings still visible in churches, where they had merely been white-washed and are now uncovered.

One might mention a thirteenth-century Virgin and Child at Chichester, paintings in St. John's Chapel at Canterbury, and several others: these are wall-paintings, and whilst of great interest, do not tell us very much that is new except that the English School was a

very individual one at that date. The early paintings are not at all to be mistaken for the work of French or Flemish artists. Even such a unique thing as the Wilton Diptych in the National Gallery, London, is distinctively English both in the type of face and the drawing and feeling of the flowers, and also of the white hart on the reverse. This exquisite work is not in tempera, or at any rate not in the pure egg-medium. It appears to have been painted by a miniaturist, so there is some ground for the theory that the medium may have been gum and white of egg. It has the appearance of oil in some details, but it would be difficult to get this effect with oil paint as we know it. Again, it may be a size medium, but in any case it must have been an emulsion possible of dilution with water, owing to the minutely finished detail.

This work bears a good deal of similarity to the miniature-like pictures of Simone Martini, such as the Polyptych of Avignon, now scattered to Antwerp, Paris, and Berlin. None of these look like pure tempera, as they have a smooth and juicy quality, and in some cases a certain harshness of colour that is more typical of the oil medium. Compared, for instance, with any good example of Bernardo Daddi, Giotto, or Angelico, the difference is at once apparent.

For purposes of study the tempera-painter



may save a great deal of time by temporarily ignoring certain doubtful schools and painters, by including others in neighbouring classes and dividing his entire traditional background into a few clearly marked sections. It is understood that this is merely a *temporary* arrangement for the study of technique.

I have accordingly so divided the rest of this part roughly into the Florentine, Sienese, and North Eastern schools, including Perugia with Siena, and Pisa, etc., with Florence and Verona, and the Marches with Venice. The geographical relationships and details are of great interest and importance, but not until a general technique has been acquired.

It is so very difficult to distinguish the various media, even when one has had many years of practical experience that little is to be gained from any current ascriptions. Even reliable catalogues are usually hopelessly inaccurate in this matter. The only safe procedure is to study from the positive side. There is a series of pictures painted quite straightforwardly in (apparently) pure egg-medium, which are not varnished or in which the varnish does not at all obscure the method. My first list will be of painters whose works *as a rule* exhibit this character. Secondly, there is a series of painters whose work is probably either finished with oil or varnish; done with something other than pure egg; or whose

method is so subtle that one cannot tell exactly how it is done.

These sections we will now consider. It must be understood that this is not an analysis of Italian painting, nor does it include all tempera-painters; it is merely a convenient list for technical study that can be applied in any centre where there are important Art Galleries.

SECTION ONE

<i>Florentine School</i>	<i>Sieneſe School</i>	<i>North-Eastern (Venice, Verona, etc.)</i>
"Cimabue"	A. Lorenzetti	Jacopo Bellini
Giunta Piſano	Duccio	Gentile Bellini
B. Daddi	P. Lorenzetti	
Giotto	Sassetta	
Fra Angelico	Matteo di	
Fiorenzo di	Giovanni	
Lorenzo	Vecchietta	
Botticelli	Francesco di	
Pesellino	Giorgio	
	Sano di Pietro	
	G. di Paolo	
	L. Memmi	
	Nerocchio	
	Bonfigli	
	Lorenzo Monaco	

IT will at once be noticed that by far the longer list is Sieneſe. This is ſo for two reaſons. The Florentine painters were eſpecially occupied with *Freſco*, whiſt there was comparatively little opportunity for this in the ſmaller city; alſo the Sieneſe were inveterately conſervative, and their ſtyle remained practically unchanged from the beginning of the fourteenth century to the end of the fifteenth.

It is eſpecially this continuity as well as the exquisite colour of their work that makes the Sieneſe the moſt valuable ſchool of ſtudy for the *tempera*-painter.

Let us now take this liſt rapidly under review.

CIMABUE

Cimabue resembles Homer and Shakespeare, in that he is scarcely a historical individual so much as a type or gathering together of a definite period of art. The pictures so ascribed are usually so dark with incense-laden varnish and candle-soot that very little can be made out beyond the silhouette against the gold ground, or so terribly cleaned that most of the paint has been removed as far as the under-painting. There are people who profess to admire these pale green (*Terre Verte*) heads and hands, and even to talk learnedly on the assumption that the artist painted them this colour as part of some vague esoteric colour-scheme. Such idiocy would not merit attention, except that unfortunately anything sufficiently absurd seems nowadays to obtain credulity. It may be taken for granted that the older the work the less the artist thought about himself or his own ideas. The colour was usually decided for him by a traditional symbolism, as was the grouping to a large extent and many other details. When he had any individual choice in the matter it was exercised from the time of Cimabue to the close of the Renaissance, first and foremost in the endeavour to obtain a verisimilitude that we should now look upon (quite erroneously) as photographic. It was largely the intractability and limitation of materials that pro-

duced the masterpieces we so much admire. Generally speaking, the Italian painters were not self-conscious about their work; they were simple but well-trained craftspeople more of the type of our electricians and mechanics probably than the artists we know.

In the better-preserved examples of Cimabue, one can learn a great deal about massing colours and dignified and austere design. This is very valuable, as tempera inclines to small masses and pretty, gay colours, so that any legitimate tendency towards the austere and monumental is especially desirable. (With Cimabue should be studied the Byzantine mosaics and enamels, especially, at Ravenna, for these characteristics.) The same qualities, usually on a smaller scale, belong to Giunta Pisano, Giotto, and Duccio di Buoninsegna; otherwise they are quite rare in the early schools. Bernardo Daddi is notable for his jewel-like colour and exquisite workmanship, especially on a gold ground. Giotto and Fra Angelico are, of course, far greater in fresco than tempera. Giotto retains most of his impressive quality in the smaller mode, but his pictures are so rare as to be almost negligible for the average student, and the "School" pieces are of little technical value. Fra Angelico is quite different; in tempera his impressiveness is thrown aside and he becomes delicate, charming, and gay almost invariably, and usually

on so small a scale that only the experienced workman can follow him. His colour, however, is most useful to the student, for it is always direct, pure, and obvious. One can see exactly what pigments he used and how he used them. Their arrangement is not always happy, but the small size of the pictures prevents unpleasantness as a rule, and the actual hues are pure and clean and never (as is sometimes the case with Simone Martini in his smaller work) harsh or unpleasant. He usually employs a gold ground or introduces it as halo or glory, and this very much helps his colour. While studying Angelico the student should compare his colour with that of the Oriental miniaturists. Florenzo di Lorenzo of Perugia is a delightful painter of mid-fifteenth century, working when the religious element was merely introduced as an excuse for an incisive and delighted comment on the prevailing mode. His gaiety, more of outlook than colour perhaps, is very well attuned to the present time.

Botticelli's work is so various that it must be studied carefully, but most of it is, although wonderfully accomplished and expert, very straightforward, and pure tempera-painting.

One of the loveliest pieces of tempera is the portrait at South Kensington of Esmeralda Bandinelli, in which the exquisite veiled-rose dress becomes all kinds of warm lavenders and purple browns in the simple background.

Otherwise it is almost necessary to go to Florence to see his work at its best. With all the changes in style he invariably retains the characteristic outline of extremely direct and definite precision, within which the colour is gradated with miraculous subtlety of innumerable deft touches. As a rule the colour is not fused, though it sometimes appears to be so, but is built up with repeated over-paintings of fluid pigment. He is, no doubt, the greatest master of pure tempera that has ever lived. For this very reason he is not a good model for the beginner, who will be much more in his depth at Siena or Perugia.

SIENESE SCHOOL

The Sieneese seem the exact counterparts of the Florentine painters: they are the emotional, tender, and coloured loveliness in contrast to the intellectual, eager, and formal power of the Tuscans. That they should be the mountain-dwellers and the Florentines the people of the valley is odd, but that they should be forever a-yearn for the glory and beauty of far countries, influenced amazingly, like the Venetians, not only by the colour, but actually by the methods of Persian painting (whilst the Florentine traders remained all but unconscious of such things), is one of those aspects of criticism that needs still to be dealt with.

In Siena Duccio takes the place of Cimabue, with more charm and less originality, but his influence lasted only a short while as far as the more austere elements are concerned. Sasseta is, perhaps, the most serious of the school, but his chief characteristic is a certain independence and almost casualness in composition, that is, at any rate unformal, if also unlike other Sieneese. He is actually much more akin to the Tuscan painters, being concerned with "progressive" ideas of perspective and plasticity that troubled most of the Sieneese painters but little. The Lorenzetti brothers are much more typical. As with Angelico, it is fairly easy to see how their effects were obtained. Their colour is very rich and full of a golden radiance, but at the same time simple; its beauty obviously due to a warm under-painting that is allowed to show through freely, even in the case of blues. Ambrosio Lorenzetti has considerable dignity and largeness as well as charm, achieved by simple arrangements of massive and unworried colour-spaces: he seems to have influenced the later Jacopo Bellini a good deal.

To realize the gulf separating Florentine from Sieneese methods, it is only necessary to compare such a picture as Vecchietta's (Lorenzo di Pietro) *St. Bernardino Preaching* (owned in Liverpool) with any similar Florentine picture, half of which is devoted to elaborate architec-

tural bravura. In spite of the subject, or rather of the objects used, there is in the Sienese picture no hint of hardness, harshness, or coldness; both architecture and figures, although perfectly precise, float in a pale golden light that is of an almost dreamlike character. The colours are never very intense nor definite, and there are only three or four, upon which infinite changes are run as on a peal of bells. There is a warm cream or pale gold, a dull warm rose, a rather pale grey-blue, and a range of neutral colours from a greenish bronze to a warm grey. It is a Whistlerian or Japanesque *tour de force* that would have been as impossible in Florence as in Spain or Germany.

In Matteo di Giovanni we have an artist of exceptional value as a master, and whose work is very well represented in the National Gallery in London.

His unvarnished *St. Sabastian* (No. 1461) is as straightforward and accomplished a piece of tempera technique as can be found anywhere, and its light tonality makes it easy to see. Another tiny picture of infinite charm is his *Ecce Homo* (No. 247), just the thorn-crowned head, blue background, and exquisite pink border.

The blue in these two pictures is rather unusual in Italian painting. It resembles our Cerulean blue (which we must suppose un-

known to them) and is probably a powdered glass such as the Egyptian glass-blue, or something of similar character. It is rather opaque, even in tempera, but so intense that it is not chalky or hard.

These pictures should be compared with a nearby series, by Ugolino da Siena, mentioned elsewhere.

The rest of the Sienese follow similar lines in their delightfully varied ways, and much can be learned from them, but they call for no special comment. Their colour is invariably lovely, their line flowing and sometimes the least bit tired or too refined. Their resemblance to Oriental Art is extraordinarily close, and Persian, Indian, Chinese, and Japanese schools of painting should be studied alongside, as, though they probably did not use egg-tempera as a rule, their methods are often so close as to be most valuable.

NORTH-EASTERN PAINTERS

The Venetian painters are the most difficult to study, the fewest, and, from the point of view of tempera *technique*, the least important. The nearness and continual inter-communication with the Gothic oil- and varnish-using north affected their medium as well as their outlook, so that whilst from the æsthetic point of view they are of supreme interest, for the

tempera-painter they provide an almost insoluble problem. The beginner therefore may safely leave this school out of his curriculum until he has gained considerable mastery of his materials.

Apart from Antonio da Murano, J. del Fiore, and other early painters, there are only one or two technicians at all easily accessible in central collections whose pictures can be cited as typical examples of tempera technique. Giambono, who is a rare painter, is really more akin with the Veronese school: indeed, there is little in Venetian painting of early days that does not hail from Verona or the Marches (and hence from Siena and Florence). It is therefore most convenient to consider these painters together.

Allegretto Nuzi (before 1370) and Francescuccio Ghissi both combine in a most interesting manner the qualities of the Sienese school with the severe and architectural character of Giotto. The Madonnas which they mostly painted are decked almost always in elaborate gold brocade; but though the dress is the dress of Siena, the silhouette is the silhouette of Giotto. The curious trait which makes these painters of unusual interest from the technical standpoint is the disposition of the figures. Quite often the Mother and Child, instead of being severely centred and the background filled with saints or angels, is

designed as one very simple mass and placed *at one side* and the gilt space of background left empty, giving a quite modern feeling of space to an otherwise hierarchic design. These painters coming just before the important Veronese artists influenced them strongly.

The Verona-Venice-Marches School is mainly of interest for the very similar work of three painters, Stephano da Zevio, Gentile da Fabriano, and Pisanello, but after 1400 one can no longer look with any certainty for the sign of pure egg-tempera in the more distinguished painters, and the last, at any rate, must come into the next section. Stephano da Zevio with Lorenzo da Sanseverino and other minor local painters are, as it were, a transition between the vivid but immature Nuzi and Ghissi and the fully developed art of Fabriano and Pisanello, which led on directly to Venice by way of Jacopo Bellini.

Whether because of experimentation with half-understood oil or some other misadventure, the exquisite painting of da Zevio is sadly discoloured for the most part: his greens and blues are almost black as a rule, and only the lovely flesh colours, whites, and occasional gleams of other hues remain, so that it is mainly for his flowing and rippling composition that he is important technically. It is just as well to notice, however, that this tendency of suave curvilinear design is one

leading inevitably to an oil or varnish technique. Gentile da Fabriano was such an inveterate lover of pattern that although we often see the influence of the da Zevio wave rippling over from Siena, the Florentine mosaic tendency is always at hand claiming attention. He thus maintains a fairly even balance, and adds to it the Gothic delight in nature (other than human), which reached its culmination in Pisanello and the early Venetians.

Already in Fabriano, tempera is becoming more juicy, so that we wonder sometimes if a little varnish may not have crept in, but it scarcely as yet obscures the technique or changes it.

Some of his later work is so similar to that attributed to Jacopo Bellini that one naturally asks if these works are not wrongly ascribed. In any case the influence is marked. Jacopo Bellini, whose pictures are so rare, is still very definitely a tempera-painter. He is a curious contradiction. On one hand his work is almost primitive in its difficult representation of the figure and little clumsinesses; compared with the assurance of Botticelli, for instance, it is not masterly. On the other hand, in such a picture as his *Mother and Child* of the Uffizi Gallery and similar works, the flesh treatment is very near that of Carpaccio and Giorgione. One can at least see that it will develop along those lines; and that is perhaps

what makes his work so extraordinarily fascinating.

With Gentile Bellini, who sometimes used pure egg and sometimes oil, one is conscious of a slight sense of disappointment: the promise has not been fulfilled. Giovanni, who embraced the oil technique whole-heartedly, entirely failed to relinquish his essentially tempera sense of design, which was carried to the utmost refinement in an almost Florentine manner, and so again leaves us unsatisfied. Had his works been executed in tempera their colour would have been improved in quality, and his rather hard tendency would have been merely a delightful precision.

SECTION TWO

<i>Florentine School</i>	<i>Sienese School</i>	<i>North-Eastern</i>
Fra Filippo Lippi	Ugolino da Siena	Pisanello
Baldovinetti	Simone Martini	Giambono
Piero della		Carpaccio
Francesca		Bartolommeo
Pollaiuolo		Veneziano
Piero di Cosimo		Vivarini

MRS. HERRINGHAM thinks that the painting of Fra Filippo Lippi has as much the appearance of blend as is possible in tempera, and if she means pure egg-medium she is no doubt right. Although there is no sign of other materials in his work, it is often difficult to see exactly how he has obtained those melting effects of colour which some people so much admire. Probably, as Mrs. Herringham suggests, they are the result of repeated liquid washes. This effect is perhaps valuable occasionally, but it often borders on the "messy", and one feels that it is anything but a straightforward use of the medium. It is, however, a good instance, especially his *St. John Baptist with Saints* of the National Gallery, of the utmost capacity of egg-tempera in one direction.

In the case of Piero della Francesca we have an artist who uses both oil and tempera, and probably several other experimental media, making the study of his pictures extremely difficult. Fortunately there are in the National

Gallery examples which are typical of at least two of his methods. The *Baptism* is straightforward egg-tempera, and a very clear example, the flesh being obviously painted in red and white over terre verte, which has come through in several places. The *Nativity*, on the other hand, is quite different. It is probably not painted in pure oil, but belongs to a class of work which seemed to result from connection with Germany (it is obviously painted under the direct influence of Van der Goes). The same characteristics are noticeable in the work of Pisanello, Giambono, and Jacopo Bellini. The lightest flesh colours, for example, have a minute crackling (noticed by Mr. Roger Fry in his "Early Venetian Painting" essay in the *Papers*), which suggests oil, but is quite different from any oil painting. The colour is devoid of brush-marks, and resembles enamel. A similar quality may be observed in the deep blue drapery in this picture, which is, however, not cracked in any way. This enamel-like fusion I believe to be the result of an emulsion made with amber, for this gives (apart from the crackling) a similar surface.¹

The *Saint Michael*, in the same room, is more like early oil painting, though it might have been done with a varnish emulsion also. It is, of course, quite unlike modern oil painting.

¹ Miss Lanchester claims this effect for le Begue.

Baldovinetti, the Pollaiuolo brothers, and several students or apprentices of Piero, all exhibit varying phases of the same tendencies, but the peculiar habit of flesh remains unique with the painters before mentioned, though Fra Carnevale seems to have learned its use. Piero di Cosimo is another experimentalist also influenced by the North, and his work in tempera is always a little difficult to analyse, as he uses it (as in the *Death of Procris* in the National Gallery) almost like oil.

Taking the Sienese of this section next, we come to the early painters deriving from Byzantine tradition represented by Ugolino da Siena and some of Duccio's work. No subsequent painter approached the richness or glow of colour seen in this artist, though Pisanello had the ability and means to do so had he wished. This richness is associated not with the juicy quality of oil paint, but by a sort of waxy fusion only seen in very early and very late tempera. It is still hinted at in the smaller work of Simone Martini, but entirely disappears with the Lorenzetti, Francesco di Giorgio, and the fifteenth-century painters.

It would be interesting to experiment with wax emulsions to see if this lovely quality could be reproduced. On the other hand, it is possibly due to a more liberal use of the egg yolk in proportion to the pigment and subsequent varnishing, or possibly to the use of

varnish-emulsion, or to the use of burnished gold as a foundation; the varnish method is unlikely, owing to the apparent crudity of manufacture at this early date.

VERONA

Whilst Gentile da Fabriano and Stephano da Zevio were still both fairly straightforward tempera-painters, Pisanello was already committed to something quite different. This is not to say that he never used pure egg, but such pictures as the *Portrait of Leonello d'Este* (Bergamo), or the *d'Este Princess* in the Louvre, or the National Gallery picture of *St. Eustace*, are certainly not. They all have a similar enamel-like surface under the varnish, and rarely any sign of brush-marks, the colour being perfectly fused. Occasionally there is a sort of fibrous texture somewhat like ordinary tempera hatching. His method appears very similar to that of the thirteenth-century Sienese painters, but there is even less stippling, and it seems fairly obvious that he used some sort of oil or varnish emulsion. The influence of Pisanello was of course paramount on the early Venetians. An example attributed to "Oriolo" is the portrait of Leonello d'Este in the National Gallery, his love of animals no less than his technique being clearly evident as far as Carpaccio. The curious thing is that

although Antonello da Messina and Giovanni Bellini, if not Gentile Bellini, used the current version of oil technique (possibly over a tempera ground in some cases), Pisanello apparently never did; and although his work has the fused and rich qualities of oil, it has none of its hard metallic quality, as seen, for instance, in Antonello and sometimes in Piero di Cosimo.

It is this absence of hardness in the entire work of Carpaccio, and the subsequent Venetian painters such as Bartolommeo Veneziano, that leads one to suppose that they painted with varnish glazes on a tempera foundation. It is true that oil on canvas is a very different thing from oil on panel—especially gesso-primed panel—which is no doubt what Antonello would have used, and Carpaccio's pictures are as a rule, if not always, on canvas. At the same time, such a piece of colour as the *Blood of the Redeemer* (Udine) appears to be exactly what the tempera technique would have produced when translated on to an unsmoothed canvas. Its cool radiance has at any rate never been attained in oil since Venetian days. If we think for a moment of Chardin, Fragonard, Boucher, and other French painters who have used a similar cool range of colours, we at once realize how soapy and pasty they are in comparison.

Ruskin appears to have had good reason for supposing that *Two Venetian Ladies Drying*

their Hair in the Correr Museum to be tempera, although it now passes for oil, and the St. Ursula series would seem to be tempera also. All one can say is that if these pictures are not in pure egg-tempera, and they almost certainly are not, neither are they in "oil" as we know it. It is much more probable that they are based on a tempera monochrome and finished in an oil-and-egg emulsion. With Carpaccio we may take leave of our Italian masters. It is true that Michael Angelo painted tempera pictures, but he added nothing to Botticelli's technique (apart from his method of draughtsmanship and modelling), and his point of view was one that could never adapt itself happily to the egg-medium; fresco, obviously, was his tool in the department of colour. His unfinished pictures in the National Gallery are instructive, the *Entombment* being, no doubt, in tempera and the other very doubtful.

Apparently the medium was little used for panel pictures in the North, the damp climate encouraging the use of oil. No doubt there are sporadic examples of tempera-painting in Germany and France, but these are not sufficient to warrant special study in the case of the ordinary student. He will, of course, soon realize that had the pictures of the Van Eycks, Memlinc, Matsys, Dürer, and Holbein's portraits been executed in tempera, they

would inevitably stand amongst the supreme examples. Unfortunately they were not.

It should be remembered that, although there is still very much room for improvement in the rural districts, English houses are not the damp, cellar-like vaults they once were in the winter. An ordinary urban house or flat is to-day kept sufficiently dry and warm to protect tempera if reasonable care is taken by the painter in regard to the back of his picture as well as the front.

It is well, in disposing of freshly painted pictures, to paste a label on the back, giving concise instructions as to treatment should mould appear, and attention should also be drawn to the need for periodical cleaning of the glass *inside* as well as out and inspection of the surface.

THE REVIVAL IN ENGLAND

In 1844 Mrs. Merrifield published her translation of Cennini's treatise, *Il libro dell' Arte Trattato della Pittura*. This was made from the eighteenth-century MS., which omits sixteen chapters (162-177), not important ones.

It is very difficult to understand how it was that the pre-Raphaelites, whose inception is dated 1848, seem to have worked on in entire ignorance of the subject when they were

keenly interested in the methods as well as the appearance of the early pictures. However, it seems quite clear that for at least thirty years after their formation they continued to use water-colour, oil, and, in the case of Burne-Jones, some size medium as well. The technical history of this period seems obscure. Before this date Blake had somehow or other heard the word "tempera" applied to the Italian painters, and fancied that he used their medium, but his pictures show no signs of it, being mostly in a very bad state, and certainly not painted with yolk of egg.

We know that Sir W. B. Richmond experimented with tempera about 1870, and Spencer Stanhope said that he received instruction in the method from Signor Rocchi at Florence, about the same time. This very definite method, which is different from that of the Southall school, is given in Vol. I of the *Papers*, p. 38.

In 1883 Mr. Joseph E. Southall was interested in the subject by Ruskin's reference to Carpaccio's works as being in tempera (in St. Mark's Rest). He also mentions the *Venetian Ladies* of the Correr Museum as being in tempera.

From this date the practice steadily developed, but with considerable difficulty, until with the complete and accurate translation of Cennini's Treatise in 1899 by Christina J.

(afterwards Lady) Herringham, there was an excellent and easily accessible guide and reference book.

As a result of this translation and the spade-work of the pioneers, the interest of Watts, Burne-Jones, and William Morris was aroused, but it was too late in the day for any serious use of the medium by these men. The group around Morris, however, were all more or less inspired by the new-old medium, so obviously suitable for their type of work, and a definite school began to form round the School of Art at Birmingham. It was in this city that Joseph Southall worked, and amongst the group mentioned he taught the method to Arthur Gaskin, C. M. Gere, and Henry Payne and others, mostly collaborators with Morris at the Kelmscott Press. It was here, somewhat later, that the present writer acquired his first knowledge of tempera.

In 1901 some of these pioneers started the Tempera Society with Lady Herringham; the object of which was primarily not exhibition, but the building up of a sound tradition of craftsmanship by study of all branches of the subject and the pooling of results at informal studio meetings; the papers read by members at these meetings—published by the Society in two slim volumes—constitute an invaluable aid to the tempera-painter.

The other painters early attracted to tem-

pera include the names of John Duncan, J. D. Batten, Marianne Stokes, Harry Morley, Mary Sargant-Florence, F. E. Jackson, Margaret Gere, Water Crane; whilst to-day Messrs. Wadsworth and Armstrong represent the left wing of the movement, which links it up with such continental artists as Chirico. Several exhibitions were held, and some of the painters exhibited tempera pictures at the original "New Gallery" in Regent Street. But the time was not ripe for the medium, and its growth was slow and difficult. This was no doubt partly due to the fact that tempera pictures do not as a rule hang well beside those in any other medium, so that the ordinary exhibitions never welcomed them, and the exponents were neither numerous nor prolific enough in the early days to warrant a special regular exhibition, which would no doubt have popularized the medium much more quickly than has been the case.

A sort of underground education has, however, been going on both by means of several schools of art—where enthusiasts were teaching—and to some extent by the few writers on art, such as Sir C. J. Holmes, Roger Fry, and others, who were acquainted with it.

Another more doubtful advertisement has been gained by the endeavour of colour-makers to invent some means of preparing

tempera suitably for putting up in collapsible tubes like oil or water-colour.

These were on the market by the beginning of the century, two of the earliest makes being those of Dr. Schoenfeld and the Muzii colours, soon followed by Schmienke and many others. These were all quite unlike freshly-ground egg-tempera both in their consistency and appearance, but they proved useful in their own way and have achieved sufficient popularity for English makers at last to add their quota.

By this date such colours are more used by children, young students, and poster designers than for works of lasting importance. Even when egg is the basis (not by any means always the case) the result of the processes of preservation and bringing the mixture to the right consistency entirely changes its nature, so that it seems to lose most of its attraction, whilst the permanency of such mixtures is more than doubtful. They cannot be recommended therefore, and pictures so painted are not recognized by most artists as deserving inclusion as tempera-painting, which is quite as much a point of view as an actual medium. The significance of this revival lies not only, or perhaps mostly, in pictures as yet painted, but in the fact that the medium is rehabilitated and perfectly accessible to anyone who wishes to use

it. This is entirely due to the often difficult (and rarely remunerated) labours of the pioneers and the very few patrons whose foresight enabled them to continue their experiments.

As a rule a revival, whilst setting out to imitate a previous achievement, rarely does so in actuality: the approach must necessarily be different. What is generally overlooked is the fact that, whilst the point of view of the artist changes, the medium does not (except as he changes it to suit his requirements). A medium may be used to express quite different states of mind.

The modern painters for the most part have found that nothing was to be gained by any radical departure from the early methods, and those who have departed furthest have not done the most original work: so that the actual manipulation of the paint is practically the same as Giotto received from "certain Greek artists". The differences are seen to be those of the general thought of the period and of individual predilection.

J. E. Southall's pictures of boats or people have the glowing radiance of the Sieneſe pictures, but no Sieneſe painter of the fourteenth century could have painted any of them. Still less are the works of J. D. Batten or the present writer to be mistaken for early Italian, though if the actual surface and method of

painting were examined it would be very similar in most cases. For one thing, the range of colours is generally lighter on the whole. In the case of such recent exponents as Edward Wadsworth, his pictures, whilst retaining to an astonishing degree the essentials of the technique of Botticelli or Mantegna, are entirely of to-day. In his case it is perhaps more easy to define the difference in that he makes little attempt to show one his own vision or to represent any particular scene. His work is extraordinarily impersonal, unsentimental, and evocative. It is as though he opens a window and shows us what WE feel about the thing he is using as material for his picture. His evocation of the sea, for instance, is quite wonderful, though he scarcely ever draws it; and when he does it is a summary and, as it were, accidental inclusion. The mediæval painters rarely attempted to draw it either, and when they did so their success was not marked (Botticelli's sea in his *Birth of Venus* is a good example of the perfunctory and careless way it was treated), but one feels that they were baffled by it: that if they could they would have represented it as faithfully as they frequently did the sky. At any rate, the feeling of sea given by Wadsworth is lacking in their work.

This is one small instance of the entirely different effects obtained by precisely the

same methods; for Wadsworth's lines are as definite as those of Botticelli, and his colours as precise and straightforward as Angelico's. It would seem, indeed, so naturally can these painters looked on as "advanced" use egg-tempera, that we have returned to a point parallel with the former users of it, for a medium comes and goes with the mental aim it can serve.

The practice of the medium can fairly be said to have conditioned the entire direction of Italian painting, at least on its technical side. This means much more than the mere substitution of egg for oil as an adhesive. It implies in its practitioner an attitude of mind towards his work entirely different from that of the man to whom oil paint is desirable or even "convenient", as one apologist has it. Any painter who has used egg-tempera in the traditional way (and it cannot well be used in any other) knows that, whilst only a fool will allow himself continuously to imitate the trappings of a period, yet at the same time there is only one attitude possible towards his medium, and that attitude must be the same for an Indian of the fourth, an Italian of the thirteenth, or an Englishman of the twentieth century. Nor does this mean that either need abandon his birthright or the discoveries germane to it. We do not enough consider that to each medium belongs its distinct

approach, and that this does not vary with the centuries, for the additional possibilities discovered from time to time in any process do not necessarily supersede all others; they are frequently not better but merely different, and if legitimate are approached with the same attitude.

To understand somewhat the attitude of the temperist, then, is necessary before we can judge as to its suitability or otherwise for our present and future needs. It is true that we are not at the moment conscious of any particular needs, but this condition is not likely to last long.

We are at the end of a "movement" best represented—as its foremost apologists themselves agree—by Cézanne and his followers. From this influence the succeeding generation will, of course, react, for such swings of the artistic pendulum serve as a balance until a more perfect one is evolved. This movement is a very curious one, and as its successor will no doubt exhibit contrary traits, it may be useful to glance at its principal characteristics. It may eventually be seen to have been an expression in art parallel to the prolonged hiatus or eruption which in life precipitated the Great War. In some ways it seems more to resemble a bridge, or even a gap or period of demolition and preparation, rather than anything definitely in the line of traditional

continuity. And to accept its own left-wing pronouncement that the idea of tradition is exploded is too Canute-like an attitude seriously to consider.

We shall probably find that our "new movement" will pick up the threads very much where they were dropped at the beginning of the century. The age was then preparing for an increase in the power of democracy (since demonstrated), but the so-called "Modern" Movement was essentially aristocratic. It was moving towards a simpler, franker, and more unsentimental attitude towards life, which should have been similarly expressed in that of the artist both towards life and towards his tools; but the "modern" artists' productions, though superficially simple on occasion, were more often summary and crude, and for the most part had no relation to life technically or in any other way.

I say the movement was aristocratic for this reason—that it is impossible for the layman, unversed in the highly specialized technique and jargon involved, to make anything either of the pictures concerned or of the explanations about them so freely provided. In reading Mr. Clive Bell's *Since Cézanne*, for instance, few, surely, could glean any clear idea as to what constitutes an admirable picture, and scarcely what qualities the painters

one is asked to admire are admirable for. One is assured, "if I mistake not", a great many times that they are in the "grand" tradition (right-wing criticism this) or in "the movement", and that is about all. We are told, of course, that the mission of a picture is to be beautiful and not to represent something beautiful (in other words, that paint is a form of language or symbolism), that the painter must have sensibility—"an adorable gift"—but generally before any definite picture it is most convenient to be merely reminded of something else. This is not the author's fault, of course; it is rather a characteristic of the whole movement, which is one of evasion—a vague fumbling after something which is in itself more importantly a negation of this or that than a positive affirmation. It might well adopt the "Safety First" slogan.

Its painters could not frankly enjoy the mere appearances of things because they were afraid of representation: they could not use their tools as symbolism because that would not have been a purely æsthetic impulse, and besides, they evidently knew nothing about symbolism. It is this withdrawal from the fray, this impalpable refining away of all reasonable aims in art to an undefined mastery of some vaguely personal feeling about heaven knows what, that we are rather tired of. I refer especially to painting, and also especially

to painting as blessed by the intelligentsia, the critics able to impose themselves as their mentors, and the wealthy whose purchases the latter directed; for the movement, as we say, was aristocratic—a momentary throw-back to the mediæval condition in which Patron and Parasite lived in mutual vanity.

In architecture, on the other hand (from which painting has in this country been successfully divorced), and to a lesser extent in the “applied” crafts, we see the true continuity of tradition almost unbroken, developing the idea half-unconsciously originated by Carlyle, Morris, and Ruskin, of honesty as regards materials. This is now rather horribly referred to as Constructionism. It is indeed odd that side by side with the evolution of an entirely craftsmanlike, straightforward, and clear-cut style in building and furnishing, evincing perfect continuity from the pre-Raphaelites through Glasgow, Austria, and Germany, and finally Paris, with material help from Scandinavian and American talent, we see the painters of pictures entirely put off by two false scents. The narrow intellectual outlook of Cubism pulls them one way, and the accident of a clumsy or wilful crudity of technique on the part of outstanding leaders draws them to the other. However much one may admire certain qualities of Rousseau, Gauguin, or Van Gogh—and no catholic-minded painter

could help admiring them—it is always “in spite of” obvious inadequacies of craftsmanship. Even the “new” critics admit that Cézanne fumbled. The fact is that the laxity of the war period and its detestation, both of discipline and application (so understandable!), could poison the ostensibly irresponsible painter where it could not so easily derange the architect who had to face the eternal problem of economics *before* and not after his work was finished, and who also knew all the possibilities of “abstraction” by heart.

Accordingly, we find at the moment a vital and highly developed style of architecture with a corresponding technique rapidly applying itself to the immediate problems of wall-covering, lighting, heating, and furnishing equipment, even (and as a rule) to the sculptor's problems; but as soon as anything seriously pictorial is called for, nothing forthcoming but a medley of unsuitable and half-considered sketches, either coloured diagrams of far less significance than the architect's plans or equally incomprehensible canvases executed by someone obviously disdainful of or indifferent to his medium.

Now of the future.

One of the characteristics we have in common with the Italian of the thirteenth century is a frank delight in the spick-and-span and a corresponding impatience with the decayed,

dilapidated, and pathetic, the mysterious and withheld. This may seem an exaggeration; I speak of the advance guard and the clear tendency.

Such an attitude can only find expression in art where the appearance of the amenities of life—the building, clothing, and so forth—are in some close relation to their function. We do not enough appreciate the immense advance made both in the average architecture and especially the average woman's clothes during the last twenty years. Before that time it was impossible for an artist to use either except as material for humorous drawings, whilst there is now no reason for evading a frank use of current conditions where they may suitably be introduced: they are just sufficiently good for the purpose. And they will no doubt improve. Already in the United States it is unusual to see an ugly *new* building.

It needs no deep probing to see that these thirteenth- and fourteenth-century painters liked, for instance, their architecture new and clean, their clothes gay and trim, their mountains cultivated (like the Greeks). They were obviously jolly. That their jollity was quite different from the rather tired, brainless, and careless attitude of to-day may be granted, but even so this may produce or call out a rather similar treatment in painting.

At any rate, it would seem that the day of

the snobbish, aristocratic, and evasive, which has reigned amongst the intelligentsia since the beginning of the century, is drawing to a close. We shall almost certainly see the rise of an art with aims, standards, and technique well defined, to be apprehended by any intelligent student, including, no doubt, what may at first seem a rather lowly delight in "common things", but which will inevitably return to some form of religious symbolism, without which no art has maintained a place in the world's history that could be called great.

That the medium of tempera may help towards this expression is an intriguing possibility. These are the qualities in which it has already excelled, and if so, it will be interesting as being essentially in the British (not perhaps the "Grand") tradition, which, whilst it has learnt its technique from Italy rather than France, has maintained its own viewpoint of sturdy common sense even when indulging in flights of phantasy. The simplicity of Blake and the humour of Burne-Jones are alike typical of a trait which is somewhat allied to the Italian logic, and which at any rate saves our greater artists to some extent from the sentimental or obscure, to which otherwise they might succumb.

There has been more than enough beating about bushes just lately, and it may be that the rediscovered medium of the early Renais-

sance may prove the means by which we shall prove once more the often-quoted truth so clearly expressed by Blake: "The great and golden rule of art, as well as of life, is this: that the more distinct, sharp, and wiry the bounding line, the more perfect the work of art; and the less keen and sharp, the greater is the evidence of weak imitation . . . and bungling. . . . Leave out this line, and you leave out life itself: all is chaos again."

Now the only possible way for great art to be produced is the method used everywhere by nature in producing large objects. A tall peak is only a slight advance on an already enormously high range of hills, and the seventh wave is only a *little* higher than its six brothers. One must first have a uniform and high general level of cultivation and of technique before the unusual genius can sustain himself at a sublime height.

The logical approach to such a condition to-day would seem to lie in two main directions. We need, in shedding the out-of-date attitude of superiority and mystery, to make an exhaustive study and revaluation of the entire technical equipment of all ages and countries (scarcely a little of which is at present collected or available to any individual): to include in this an equally necessary revaluation and classification of the "hidden" symbolism underlying all vital

schools—a uniform method invariable in its basis; and to have this taught in exactly the same way as mathematics or natural science is taught to anyone who wishes to learn the subject.

For this purpose the technical ways of the early Italian painters are ideal ones because they demand an exact and accurate method of work, clear thinking, definite decisions, and assist a straightforward attitude of satisfaction with objects *as they appear*. This must form the basis of any school of art because no uneducated person is capable of considering their material from any other point of view, and at present everyone, almost, is in that state.

It is inevitable, if the democratic idea is ever to come to fruition, that education in beauty should be considered as vital as that in truth, and both should be ubiquitous. Both the ability to read words and to understand line and colour is inevitable for all. Whether we think this good or bad is of no interest whatever to anyone compared with the question, How can this education be gained with the least amount of trouble to all concerned, so that we artists can get on with our job, creating sound work that will always be admirable because based on reason and revelation? A prime necessity in teaching this art is the realization that if any method is sound it is sound in every period so long

as it is used for its results and not to ape an alien view. As Segantini perspicuously remarks: "That (art) which never changes is the work of artists superior to the cheap triumphs of fashion, and these men have succeeded in all ages in creating works that no fashion can destroy. The true work of art lives by its own means, and not by those borrowed from the spirit of the moment." And whilst it is quite possible to use the trappings of our own time as symbols, yet no great art has ever limited itself to the recording of the trivial accidents of human life.

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